gineering
ue: Special report to AREA

March 18, 1968

RAILWAY AGE

THE TRANSPORTATION WEEKLY

McCARTNEY LIBRARY
GENEVA COLLEGE

MAR 20

THE EFFECT OF HEAVIER LOADS ON TRACK

—and what to do about it

RD68 1116
GENEVA COLLEGE
MCCARTNEY LIBRARY
BEAVER FALLS PA
15010

-on Timken® bearings!

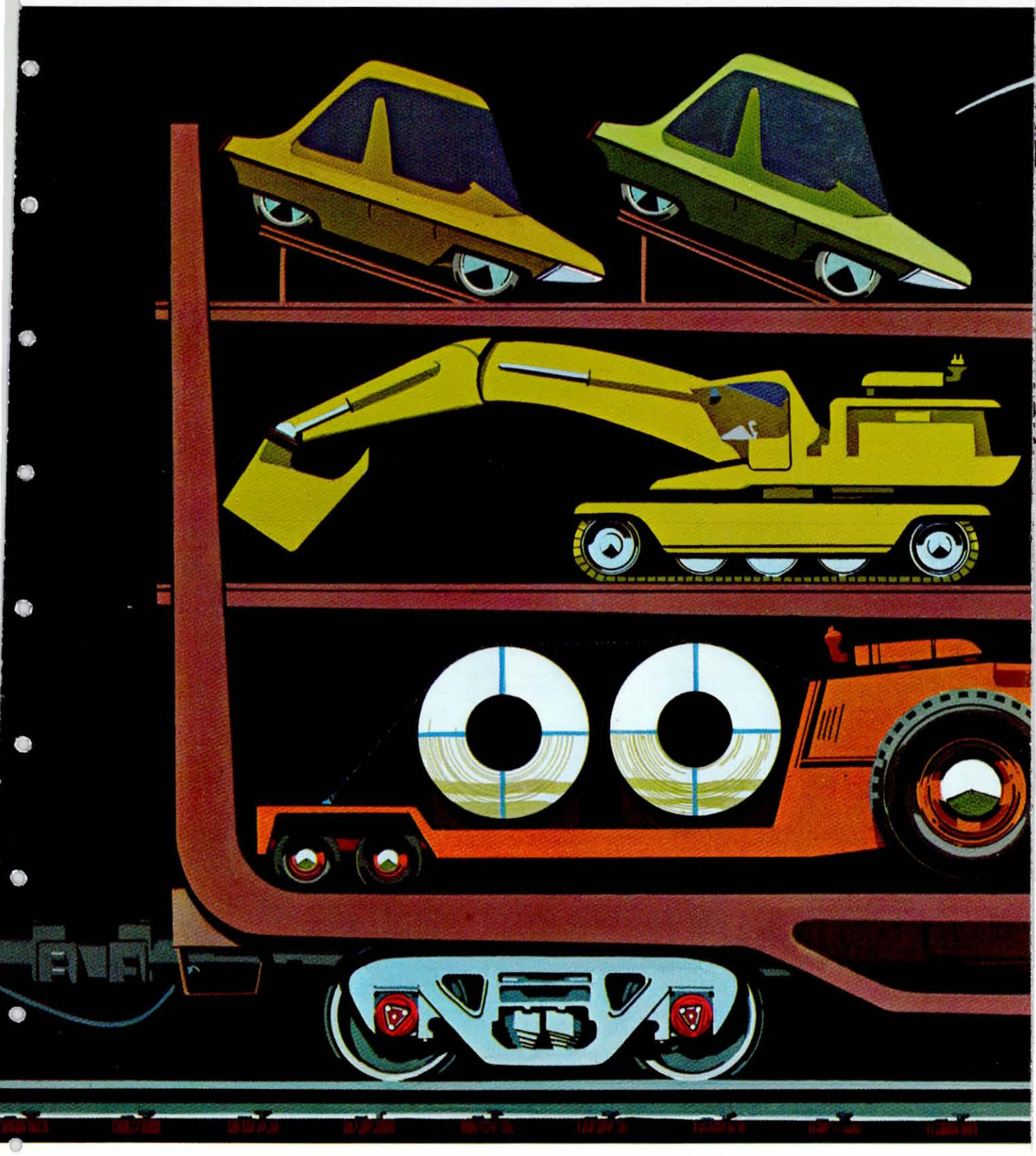
maintenance, and provide cargo a smoother trouble-free ride.

The Timken Roller Bearing Company, Canton, Ohio. Also makers of Fine Alloy Steel and Removable Rock Bits. Timken bearings sold in 133 countries; manufacturing in Australia, Brazil, Canada, England, France, South Africa and the U.S.A.

TIMKEN®

TAPERED ROLLER BEARINGS

Here comes tomorrow-

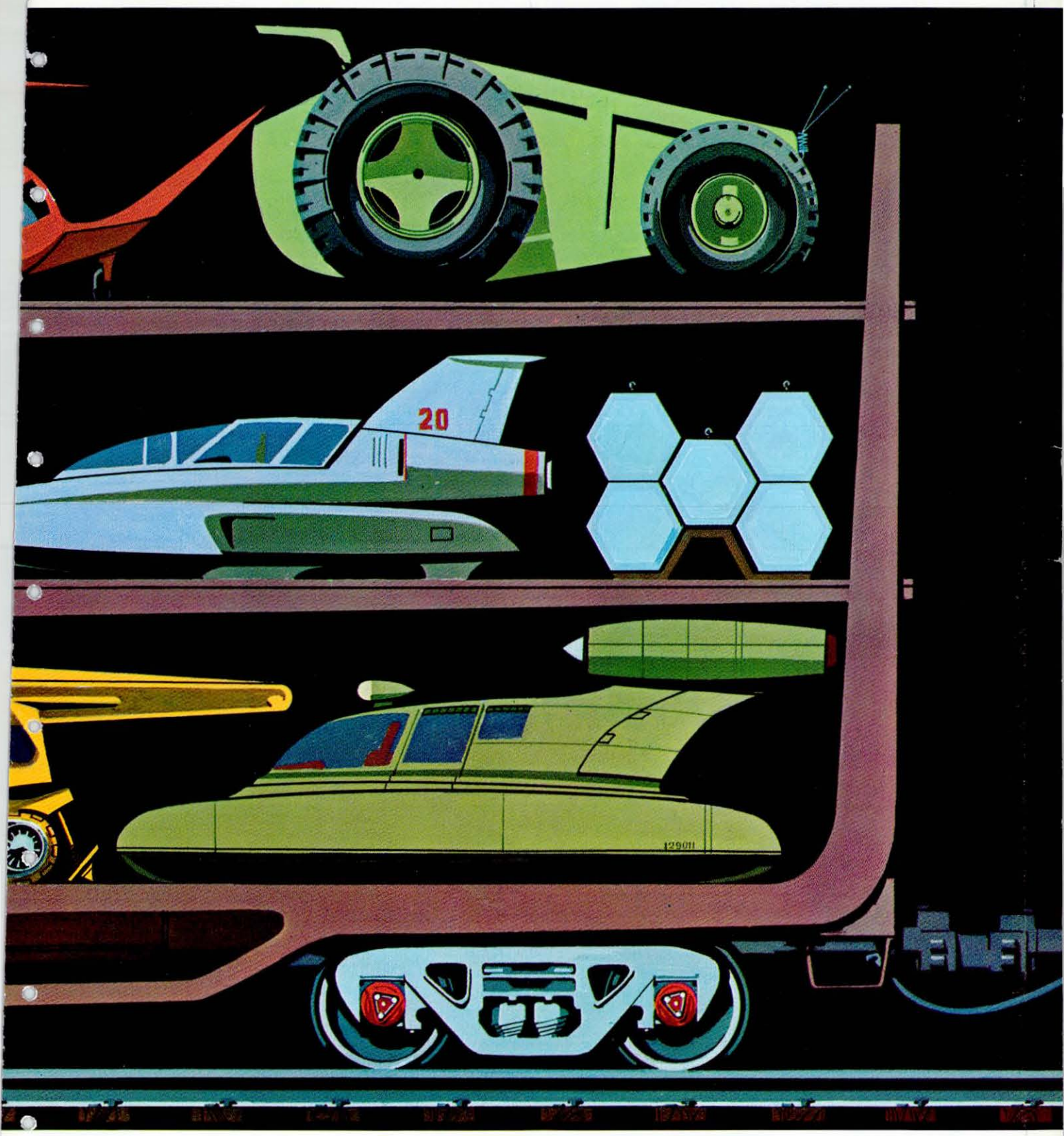


A railroad rack car for the future, carrying a load of tomorrow. And not as far off as you think. Already the railroad industry has revolutionized hauling with the concept of piggybacking. Railroads look forward to cars with new designs, new capacities, new versatility. To move new kinds of cargo, faster and easier.

And the Timken Company is ready to supply the Timken® "AP" (All-Purpose) tapered roller bearings these cars of the future will roll on.

Timken bearings are case-carburized for extra toughness, tapered to take both radial and thrust loads—or any combination. And Timken bearings have proved they last longer, require less

Clear track ahead!


20

looking forward to the future

On up the line to the challenges of tomorrow — foresighted railroads are planning a bigger and better future. With nearly a century of teamwork with railroads behind us, CF&I looks forward to serving progressive railroads across the nation with cooperation for innovation and superior quality products: rails including Hi-Si® / joints, tie plates, spikes, bolts, and special accessories / barbed wire / fence posts / fence stays / woven wire fence / merchant bars and shapes / wide flange beams and other structurals / nails and staples / wire rope and slings / prestressing wire and strand / reinforcing bars / galvanized steel strand. Sales offices nationwide. CF&I Steel Corporation, Denver, Colorado.

CF&I
STEEL

RAILWAY AGE March 18, 1968 • Vol. 164, No. 11

THIS WEEK

28 Heavier loads put new pressure on track upkeep

The AAR's G.M. Magee discusses the problem—and some solutions.

31 AREA convention program

What's going on—where—when, with a guide to the exhibit.

34B New developments for railroad engineers

What suppliers are doing to make life easier for M/W forces.

66 Viewpoint—The M/W revolution must go further

Needed is a method of allocating funds for track and structures.

DEPARTMENTS

27	As the Editor Sees It	40	People in the News
61	Freight Carloadings	7	Short and Significant
54	Letters from Readers	46	Supply Trade
12	Lines on Labor	66	Viewpoint
8	Monday Morning Report	50	Watching Washington
61	New Equipment	11	Week at a Glance
34B	New Products Report	64	You Ought to Know

. . . AND COMING NEXT WEEK

Cut the outgo and improve the income: That's a major theme of a March 25 Railway Age Special Report, covering Chicago & North Western's analysis-plus-action program to cut casualty losses and the successes a number of other major roads are having in putting the brakes on rising freight loss-and-damage costs. Like all Freight Traffic issues, this one will be mailed to 10,000 leading shippers, as well as to the regular subscriber list.

Editorial and Executive Offices
New York, N.Y. 10007, 30 Church St.

ROBERT G. LEWIS: Publisher
LUTHER S. MILLER: Editor
FRED C. MILES: Executive Editor

Managing Editor: Edward F. Donlon
Transit Editor: Joseph Asher
Mechanical:
C. L. Combes F. N. Houser
Art Director: Joel Petrower
Art Editor: Maurice H. Mates
Art Assistant: Thomas J. Pendergast
Editorial Assistant: June Meyer
Director of Research: H. B. Bolander
Librarian: Edith C. Stone
Production Manager: Fred B. Hecht
Manager—Contract Department:
Constance Nicolai

Editorial and Executive Offices
Chicago, Ill. 60604, 14 E. Jackson Blvd.

C. JAMES FISHER: Vice President—Sales
GUS WELTY: Senior Editor
Western Editor: Frank Malone
Mechanical: Robert D. Bartley
Engineering:
M. H. Dick R. E. Dove
Signaling & Communications:
Robert W. McKnight E. L. Abbott
Editorial Assistant: Wanda Brown

Washington, D.C. 20004,
National Press Bldg.
Washington Editor: Walter J. Taft

London, W.C. 2, England, 4, Talbot House; 98 St. Martin's Lane
International Editors:
Geoffrey Wilson John Levett

Contributing Editors:
Norman E. Gillespie
3205 Chelsea
Orlando, Florida 32803

Charles Layng
115 West Gore St.
Orlando, Florida 32806

E. L. Woodward
876 Chattanooga Ave.
Pacific Palisades, Calif. 90272

GEORGE DUSENBURY: Editorial Director

FOR LIST OF SALES OFFICES SEE ADVERTISING INDEX PAGE

Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.
Published weekly (except for four issues combining two-in-one) by the Simmons-Boardman Publishing Corporation at 440 Boston Post Road, Orange, Conn.
Railroad employees' subscription rate, U.S. possessions, Canada and Mexico, $6 one year, $9 two years, all others $15 for one year, payable in advance and postage paid. To railroad employees elsewhere in the western hemisphere, $10 a year. In other countries, $15 a year. Single copies, 60¢ except special issues. Address all subscriptions, changes of address and correspondence concerning them to Subscription Dept., Railway Age, Emmett St., Bristol, Conn. 06010.
Change of address should reach us three weeks in advance of next issue date. Send old address with new, enclosing, if possible, your address label. Post Office will not forward copies unless you provide extra postage.

Circulation Dept.: John Rogers, Director of Circulation, 30 Church St., New York, N.Y. 10007. POSTMASTER—SEND FORM 3579 TO EMMETT ST., BRISTOL, CONN. 06010.

Printed at the Wilson H. Lee Co., Orange, Conn. 06477. Second-class postage paid at Orange, Conn. and at additional mailing offices.

Tamp clean through turnouts with new Racor® Tampease Frog.

Still hand tamping in turnouts because of old-fashioned frogs?

Save your money. Now you can run your tampers right through turnouts with the new Racor Tampease Frog.

Sidewalls of this new self-guarded manganese steel frog are recessed into the body between ties to give automatic tampers plenty of room to do the job.

This new frog is rugged. The large base contact area afforded by the integrally cast extended tie plates minimizes strain on the other members. Strong walls are provided in the raised guards. Partial box construction with supporting ribs prevents bending and mashing down.

Want to reduce maintenance costs? Ask your Abex representative for information on the new Racor Tampease Frog. Or, write Railroad Products Group, 530 Fifth Avenue, New York, N.Y. 10036.

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Abex CORPORATION

Railroad Products Group

530 FIFTH AVENUE, NEW YORK, N.Y. 10036

IN CANADA: Abex Industries of Canada, Ltd.

Circle 5 on reader service coupon

SHORT AND SIGNIFICANT

Rockefeller wins transport award at Pittsburgh

For his successful sponsorship of a $2.5-billion transportation bond issue, Governor Nelson Rockefeller of New York last week was named winner of the annual Transportation Award at the Third International Conference on Urban Transportation in Pittsburgh. The presentation was made by Governor Raymond P. Shafer of Pennsylvania. Previous winners were Adrian Falk, president of Bay Area Rapid Transit District (1966), and Senator Claiborne Pell of Rhode Island (1965).

New Jersey has master plan for transportation

Following on the heels of New York State's announcement of a $2.9-billion master plan for transportation, New Jersey announced somthing similar—a $2.5-billion ten-year plan. David J. Goldberg, state commissioner of transportation, recommended a $1.2 billion bond issue as keystone of the plan. Of this amount, $1 billion would go for highway construction, $200 million would support the state's previously announced $400 million plan for mass transit—mainly to upgrade rail commuter operations. Gasoline taxes would pay off the state bonds, and remaining funds would be tapped from federal and local sources.

Ex-PRR Chairman James M. Symes retires from board

James M. Symes, retired chairman of the Pennsylvania, has resigned from the board of directors of what is now the Penn Central. He has been succeeded as chairman of the executive committee by Richard K. Mellon of Pittsburgh, a member of the Pennsy board for 34 years. John T. Dorrance, Jr. of Philadelphia, chairman of the board of the Campbell Soup Co., has been elected to fill the vacancy on the Penn Central board.

C&O/B&O meet a passenger problem head-on

C&O/B&O not only invite overnight coach passengers to "sleep like a kitten" —they're now giving their customers free pillows carrying the message. The yellow-covered, foam-filled pillows carry a sketch of "Chessie," C&O's famous kitten. Since they're also intended as free take-home souvenirs, they will serve as more or less permanent advertisements for C&O/B&O trains. Says David A. Watts, Jr., director of passenger services: "Although this is a small refinement, it is further evidence of C&O/B&O's continuing effort to encourage travel by train."

Railroads' role in Illinois growth told in new film

The rails' role in the development of Illinois is portrayed in a color 16-mm film released by the 24 railroads that serve the state. Titled "Railroads—Route of Illinois Progress," the film was produced as part of the state's 150th anniversary observance. Running 14 minutes, it covers the industry's technological advances as well as its Illinois-growth relationship. The film is available on loan from the Association of Western Railways, or from Sterling Movies, Chicago.

Burlington tries to make it realistic

If there's one thing Burlington wants in its advertising, it's realism—even if the Q's admen have to go behind the Iron Curtain to get it. Burlington wanted a satellite-photo of the central part of the country, to illustrate a blockbuster ad announcing its real-time car-tracing system. NASA satellites, however, take a path too far south for the kind of coverage wanted. So CB&Q's director of public relations and advertising decided on the direct approach. "Dear Mr. Dobrynin," he addressed the Soviet ambassador to the United States, "We understand that observer satellites of your nation do pass over the northern part of the United States and presumably also take photos similar to those made by NASA . . . If you can provide such a photograph, we will be most grateful. Sincerely, A. M. Rung." And the result of it all: If the Russians have such photos, they're hanging onto them. Burlington hasn't heard from the ambassador. Its ads appeared last week—with artwork by NASA.

MONDAY MORNING REPORT

COAL: NO FUEL LIKE AN OLD FUEL

Despite some sleepless nights stoked-up by suffocating thoughts of hostile anti-pollution forces, flood tides of cheap residual oil and landslides of competition from foreign coal, U.S. coal producers are determined to come out on top during their waking hours. Last week, a report released by the National Coal Policy Conference, the United Mine Workers of America and the National Coal Association, gave some results of economic studies undertaken by the three groups. And if it isn't just whistling in the dark, the report and its findings should do much to off-set some of the bad dreams of coal men.

PRODUCTION'S UP, DEMAND GROWS

To begin with, the report makes note of the trend to increased coal production, showing figures that 1968's estimated 560 million tons will represent the highest annual production in 20 years. The study also disclosed that companies are opening new mines and expanding capacity at a record rate to meet the growing demand for coal, particularly for electric power generation. It adds that since 1965 electric utility companies throughouut the nation have completed, started construction on or announced plans for 81 million kilowatts of new coal-fired capacity with an expected consumption of 205 million tons annually. And how are the nuclear people doing? About 40 million kilowatts have been announced for new atomic plants since '65.

TURNING COAL INTO HARD CASH

Emphasis in the report is on what the coal industry means to the nation in terms of jobs, taxes and our overseas balance of payments problem. Key economic data brought out by the survey: Coal production, transportation and utilization in 1966 provided direct employment to 220,653 workers; wages totaled $1.5 billion a year; a total of $1.1 billion was paid out in coal producing areas for services and supplies to support production and transportation activities; and more than $134 million went to states and local communities for taxes. U.S. coal also earns more than $500 million a year in foreign sales, adds the report, thereby bolstering the nation's international balance of payments position.

GETTING THE FACTS TO THE RIGHT PEOPLE

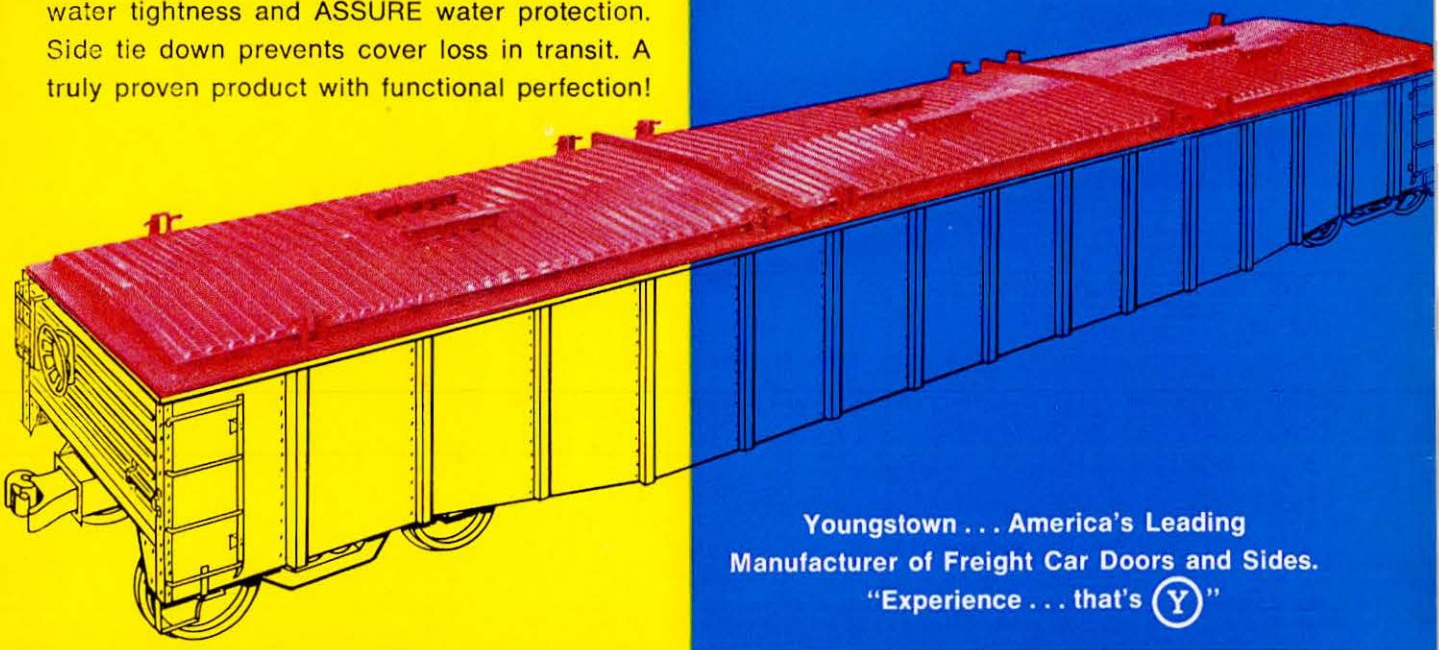
By the year 2,000 the nation will need some nine billion kilowatt hours of power annually, up from 1.1 billion in 1966. And the coal industry expects to be around to supply a hefty portion of the nation's energy needs. In the meantime, the coal people hope their report will make some impression on Congress and the government agencies to gather support for coal research—in controlling undesirable emissions from stacks and in changing coal to liquid and gaseous fuels.

GONDOLA COVERS
...by Youngstown!

The "tops" in corrugation . . . backed by years of experience and reputation. Stackable 3-piece gondola covers for convenience of loading or unloading. Designed with your requirements in mind . . . perfect-fitting width, length and inside clearance height. Lifting means for hook or magnet . . . or both methods. Youngstown covers . . . in place and interlocked at junctions INSURE water tightness and ASSURE water protection. Side tie down prevents cover loss in transit. A truly proven product with functional perfection!

The Youngstown Steel Door Company

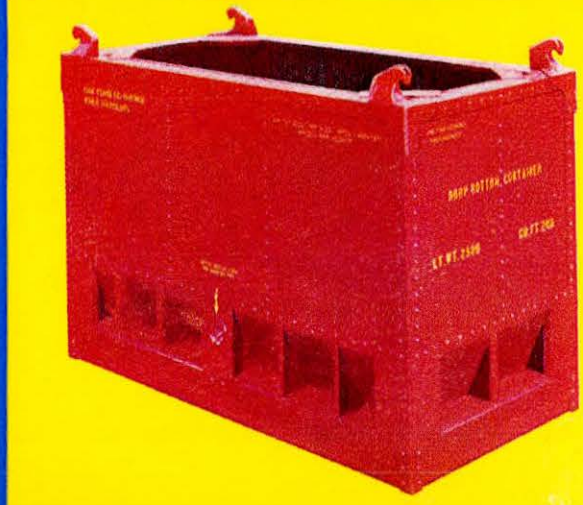
CAMEL SALES COMPANY • CAMEL COMPANY LIMITED
CLEVELAND • CHICAGO • YOUNGSTOWN • HAMMOND



Youngstown . . . America's Leading Manufacturer of Freight Car Doors and Sides. "Experience . . . that's (Y)"

HATCH COVERS by Youngstown!

Illustrated are Youngstown's 12-inch and 30-inch diameter hatch covers. Special gaskets provide absolute pressure tightness. The 12-inch has screw-type lock and can be used with covered hopper. The 30-inch diameter design operates with trunk lock . . . perfect for covered hopper cars. Intermediate sizes, if order production quantities are sufficient.



COKE CONTAINERS
by Youngstown!

Shown is our 200 cu. ft. coke container. Our standard containers range in size from 40 cu. ft. to 325 cu. ft. . . . designed to haul most every type of bulk materials. They are engineered for enduring ease of operation with drop-bottom or controlled-discharge action . . . and may have top charging doors or open top.

These are but a few Youngstown products . . . other services include customized design fabrications and assembly needs to suit YOUR requirements.

More capacity, more revenue, more profit. More of everything it takes to meet tomorrow's railroading demands. Magor's newly designed 4750 cubic-foot covered hopper car, only 53,500 pounds, carries approximately 5½ tons more payload than a comparable size steel car, so it moves more freight with fewer car placements. More strength in the underframe ensures more load capacity for today's high-speed trains ...holds muscle in reserve for more severe requirements in the future.

Integral side plate construction adds more resistance to combinations of external and internal loads. Cleaner hood-to-hopper sheet connection ensures more thorough clean-out. And unitized striker weldments ease repairs and replacements while more than meeting all load requirements of the AAR. Write for more specifications: **Magor Railcar Division, Fruehauf Corporation, 660 Van Houten Avenue, Clifton, New Jersey 07015.**

Available for immediate delivery...

Magor's 4750 Aluminum Covered Hopper

the more car

Circle 9 on reader service coupon

Agreement reached on Chicago entry for L&N via C&EI

Louisville & Nashville is coming to Chicago. That's the way the ICC wanted it, when the Commission approved Missouri Pacific control of Chicago & Eastern Illinois in 1965. And now L&N and C&EI have come to an agreement on the terms by which L&N will bridge the Ohio River and reach Lake Michigan. L&N is acquiring outright the C&EI line between Evansville, Ind., and Woodland Junction, Ill. It will have joint ownership with C&EI of the line north to Dolton Junction, Ill., and it will acquire half of C&EI's interest in both the Chicago & Western Indiana and the Belt of Chicago.

WEEK AT A GLANCE

No firm estimate of the cost of the transaction was made by the roads involved. L&N will assume certain debt obligations and pay off part in cash and securities; a variety of other conditions is also tied into the agreement, and no monetary value has been put on them as yet. ICC approval of the arrangements will now be sought by L&N.

Hands across the sea, Milwaukee-style

Milwaukee Road traffic officers have become familiar figures in Japanese transportation and industrial circles in recent months—laying the groundwork for the March 1 opening of a traffic office in Tokyo (RA, Feb. 26, p. 13). Here, the Milwaukee delegation meets with R. Ishida, president of the Japanese National Railways (second from left). Representing the Milwaukee are (left to right) George F. Flynn, sales director in Tokyo; W. Edward Cartwright, assistant to the vice president-sales and service and import-export traffic; P. Laurin Cowling, vice president of Milwaukee Motor Transportation; and President C. E. Crippen. George L. Kronberg, vice president-sales and service was also in the delegation. Traffic officers began a study in Japan last year, and wound up a month-long, on-the-spot survey of traffic potential—especially containerized freight—before the Tokyo office opened.

New rate case gets under way at the ICC

The new freight rate increases proposed by the railroads have been filed with the ICC in a tariff effective May 27, and the Commission has set up procedures with May 16 as the date for oral argument. The case is docketed as ex parte No. 259, and the tariff was filed after the Commission cleared the way by authorizing departure from its usual filing requirements and granting other necessary relief from its outstanding orders.

These relief arrangements require a provision in the tariff offering to refund the difference if the Commission finally approves increases which are lower than those proposed.

The procedural order set Mar. 25 as the deadline for filing verified statements in support of the proposed increase. Verified statements in opposition are due April 22.

D.C. rail station will be capital's visitor's center

President Johnson last week signed into law the bill passed recently by Congress to convert Washington's Union Station into a national visitor's center. Plans for the center contemplate remodeling the existing station as a tourist information and entertainment facility. This will be operated by the Department of the Interior which will lease it from the Washington Terminal Company. The lease may be for as long as 25 years, and it will include a government option to buy.

Washington Terminal will build a new railroad station and parking garage above the track behind the present station.

Awards made at transit meeting

It was a very big week for mass transit, last week, what with Pittsburgh's big urban transport conference, and major awards of federal funds to assist systems around the country.

The Third International Conference on Urban Transportation drew 1,240 transportation experts to Pittsburgh, where they heard Sen. Gordon Allott (R.-Colo.) and DOT Secretary Alan S. Boyd warn that as long as the Vietnam war continues, big increases in federal transit aid are doubtful.

Nevertheless, the federal program is still pumping money into transit, as proved by announcement at the conference by Housing and Urban Development officials that a $26 million grant to Bay Area Rapid Transit system was approved, and by news that came out informally that a similar amount would be okayed for Boston's Massachusetts Bay Transportation Authority, plus $9 million for later development. Also announced was a grant of $1.6 million for Pittsburgh for Westinghouse's testing of the Skybus.

HUD officials also took the occasion to present honor awards for design to San Francisco and Boston transit authorities and Philadelphia's City Planning Commission.

Two roads want Hanna to sell line

Milwaukee and Chicago & North Western have asked the ICC to order Hanna Mining Co. to sell its interest in the Escanaba & Lake Superior, a railroad serving iron ore mines in Michigan's Upper Peninsula. Hanna's control permits it to protect its "paramount position in the shipment and sale of iron ore in interstate commerce and in the foreign commerce of the U.S.," and this violates the Interstate Commerce and Clayton Acts, the railroads charge.

GUS WELTY

LINES ON LABOR

AT FIRST BLUSH, rail labor seems to have made a sharp selection, in its choice of representatives for top-level meetings with rail management. The five union presidents on labor's panel are all, as the saying goes, big enough to quote—and big enough to make their weight felt in the world of rail labor.

HEADING THE GROUP is George Leighty, chairman of RLEA and president of the Transportation-Communication Employees Union. With him are Harold Crotty of the Brotherhood of Maintenance of Way Employees, Charles Luna of the Brotherhood of Railroad Trainmen, Les Dennis of the Brotherhood of Railway and Airline Clerks and Mike Fox of the AFL-CIO Railway Employees' Department.

ALL MAJOR EMPLOYEE groups are represented. Ten unions are represented, and those 10 account for a substantial majority of the union people working on the railroads today. It would appear that the union delegation possesses ample strength, to guarantee follow-through on any joint program which labor and management may agree upon.

THE FIRST MEETING was apparently productive, in tangibles and in intangibles. It was, a low-key statement said, an exploratory session, dedicated to the preparation of guidelines for future sessions. For public consumption, there wasn't much to add, beyond a comment that labor and management leaders agreed again that there were many areas of mutual interest which might profitably be discussed. Privately, however, the participants seemed to be pleased by the degree of rapport established, by the absence of rancorous comments, and by the apparent desire on both sides to develop positive approaches and attitudes.

PERHAPS THE FLORIDA SETTING for this first get-together had something to do with the warm climate that prevailed. On the other hand, perhaps big men in both labor and management can now agree that too many opportunities for constructive joint action have been passed over, that the industry has consequently suffered, and that the suffering will be even more pronounced in the future unless employer and employee can work together to a common purpose. It's much too soon to say whether there really will be this kind of unity of purpose. But thoughtful men might well ponder the new ad slogan of Life magazine: "Consider the alternative."

Meet the ASF Team of Service Engineers

BOB PRINDLE, MGR.

BOB THOMAS

JOHN PLANT

GENE STEIN

LEO WASZAK

We believe you should know...

When you buy from ASF, reliable service is included at no extra cost.

ASF Service Engineering is the matchless ingredient that sets us apart from ordinary suppliers.

This is ASF Service Engineering

It is a continuing and scheduled marketing activity designed to profitably assist all railroads. It also provides for immediate response to a customer's needs.

It doesn't stop because of the clock, the calendar, the seasons, or the weather.

We are proud of these real All-Americans.

American Steel Foundries
ONE OF THE Amsted INDUSTRIES

1005 Prudential Plaza • Chicago, Illinois 60601

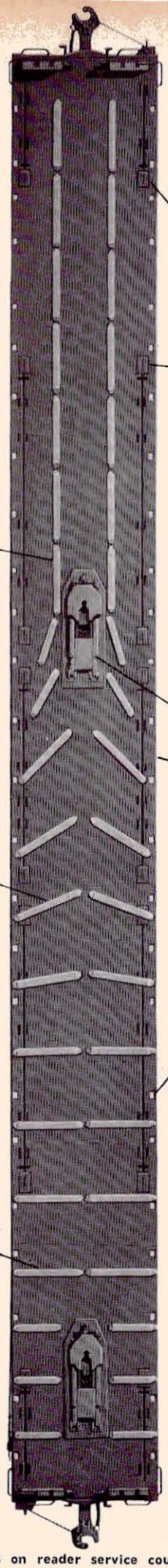
IN CANADA:
CONTACT THE ASF SERVICE TEAM
THROUGH INTERNATIONAL
EQUIPMENT COMPANY, LTD.,
MONTREAL, QUEBEC.

Circle 7 on reader service coupon

VERSA-DECK.™ The multi-service flat car.

Now there's a flat car that can be converted to handle TOFC, COFC, or bulk ladings in less than 15 minutes. And only ACF has it. The new VERSA-DECK flat car.

VERSA-DECK makes every mile pay. Ship in one direction with one payload. Return with another. Time-consuming conversions between uses which once took days now can be done in minutes. ACF designed the 89′ VERSA-DECK with a flexibility greater than that of any other flat car.



It's a container car. Pedestals can be quickly raised for COFC service. And they adjust to accommodate any length container. Stored, they lie flush with the deck to permit trailer loading.

It's a piggyback car. With the adjustable guide rails in the lengthwise position, VERSA-DECK can be used for TOFC service.

Pivot the guide rails in sections to convert VERSA-DECK from one use to another. One man working alone can do the job easily.

Stake pockets, lading strap anchors, and performance-proven ACF trailer hitches enable any load to be securely fastened on board.

It's a bulk lading car. With the guide rails in the lateral position, VERSA-DECK takes ladings like pipe, tubing, laminated beams, timbers, and dozens of other important revenue sources.

For all the details on VERSA-DECK's long list of standard and optional features, write American Car & Foundry Division, ACF Industries, Incorporated, St. Charles, Missouri 63301.

acf

ACF INDUSTRIES

Circle 8 on reader service coupon

It's Booth 105

THE SIMMONS-BOARDMAN SERVICE CENTER

at the

Railway Engineering-Maintenance
Suppliers' Association Exhibit
International Amphitheater, Chicago, Ill.
March 18-19-20-21, 1968

for complete information on The AREA Convention and REMSA Exhibit activities

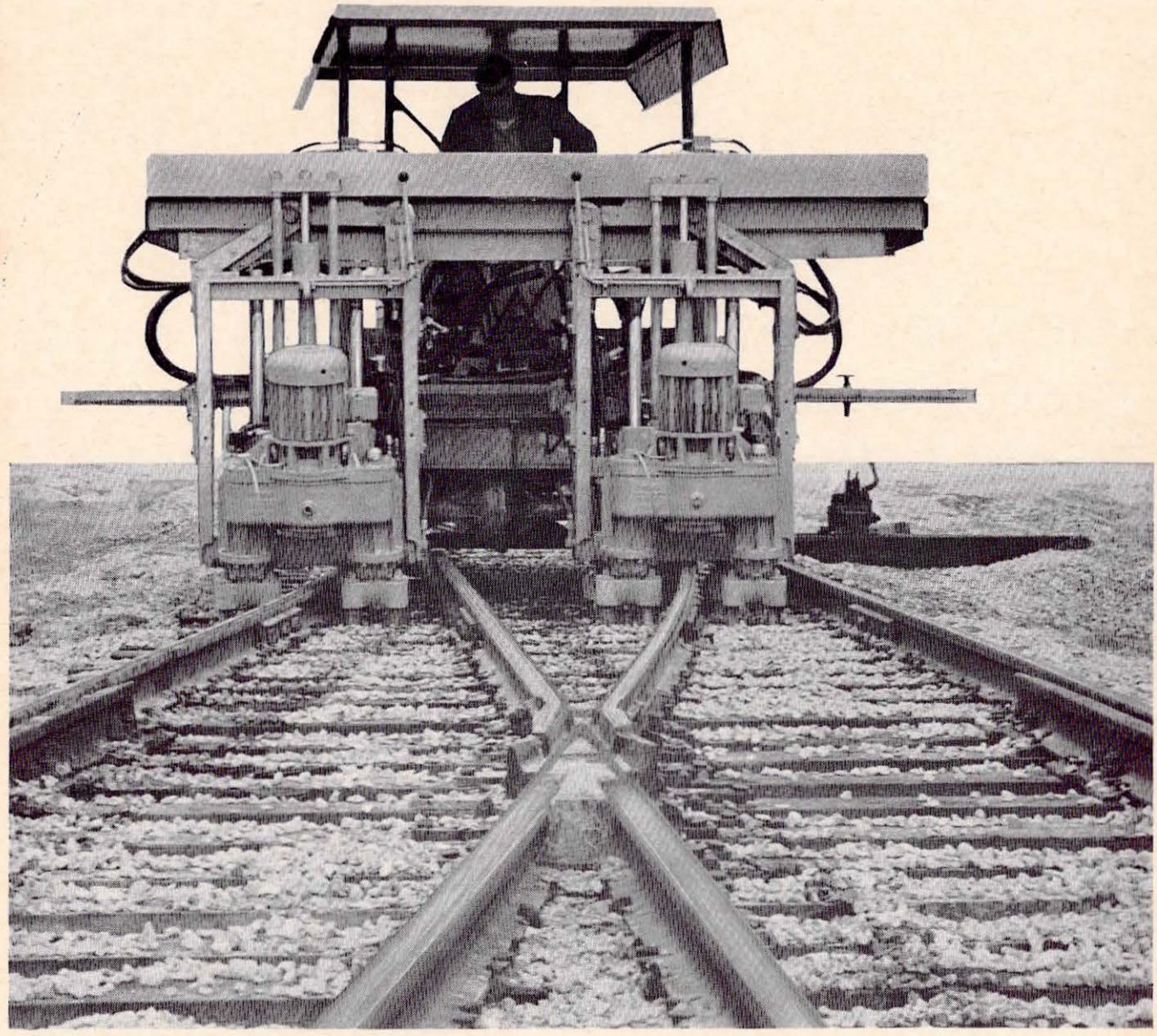
- **Up-to-the-minute file of all people registering at the Exhibit**
- **Complete list of hospitality suites at the Palmer House**
- **Telephone and message service. Call any of these telephones in our booth: 376–6912-13-14**
- **Travel reservations and information**

. . . And at the Palmer House, visit our Breakfast Bar.

Fruit juices, rolls, coffee. 7:30 a.m. to 9:30 a.m., March 19-20-21, 1968

RAILWAY AGE • RAILWAY TRACK AND STRUCTURES • RAILWAY PURCHASES AND STORES

One operator tamps the entire switch!



The New 16-Tool Switch Electromatic Tamper

It does everything the popular Junior Electromatic can do. And more! The TAMPER Switch Electromatic tamps the complete switch, turnout, crossover or ladder-track with 16 tools. At production tamper speed and pattern! Workheads can move laterally to give you higher, more uniform compaction. Another big advantage: it needs only one operator.

When you're not using it as a switch tamper, it doubles as a production tamper — for smoothing and spotting. And as a second machine in a tandem operation. The TAMPER Switch Electromatic is available with a pivoting frame to line the vibrators to the same degree as the turnout being tamped. So you get the same results as when you tamp a standard cross tie.

TAMPER designs and manufactures a complete range of railway track maintenance equipment, from spike pullers to switch cleaners. All pacemakers in design and performance.

Write today for literature on the new 16-tool Switch Electromatic and other TAMPER products.

Tamper INC.

Head Office & Plant — 2401 Edmund Rd., West Columbia, S.C. 29169 • 803/794-9160

Plant — 160 St. Joseph Blvd., Lachine (Montreal), Que., Canada • 514/637-5531

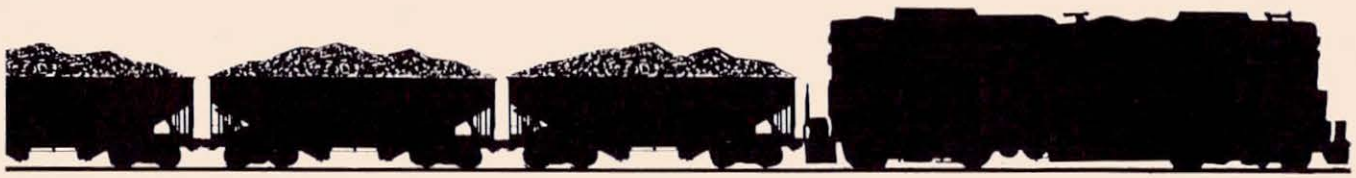
Parts Depot — 2147 University Ave., St. Paul, Minn. 55115 • 612/645-5055

Circle 10 on reader service coupon

When you buy Magnus bearings, Titanox titanium pigments, Baroid drilling muds, Zirmul refractories, or Dutch Boy paint

you're buying from National Lead.

National Lead Company with more than 200 product categories from over 100 mines, mills and plants throughout the country. Sales total? Nearly $800-million annually.



U.S. Divisions, Subsidiaries and Affiliates: American Bearing Division • Baroid Division • De Lore Division • Doehler-Jarvis Division • Evans Lead Division • Goldsmith Division • Magnus Metal Division • Metal Division • Nuclear Division • Paint Division Pigments and Chemicals Division • Southern Screw Division • Steel Package Division • Texas Mining and Smelting Division Titanium Alloy Manufacturing Division • Titanium Division • Tool and Engineering Division • Aluminum Match Plate Corporation Floating Floors, Inc. • Landover Manufacturing Company • Master Metals, Inc. • The Chas. Taylor's Sons Company • Morris P. P. Kirk and Son, Inc. • Pioneer Aluminum Inc. • The Baker Castor Oil Company • Titanium Metals Corporation of America

National Lead NL®

Circle 11 on reader service coupon

Circle 12 on reader service coupon ►

high speeds and increased tonnage demand
quality end-to-end rail testing

you can't beat 40 yrs of know-how

think about it.

SPERRY RAIL SERVICE
A DIVISION OF AUTOMATION INDUSTRIES, INC.
DANBURY, CONNECTICUT 06810

MEMBER RPI RAILWAY PROGRESS INSTITUTE

SOUTHERN RAILWAY SERVES THE SOUTH
LOOK AHEAD-LOOK SOUTH

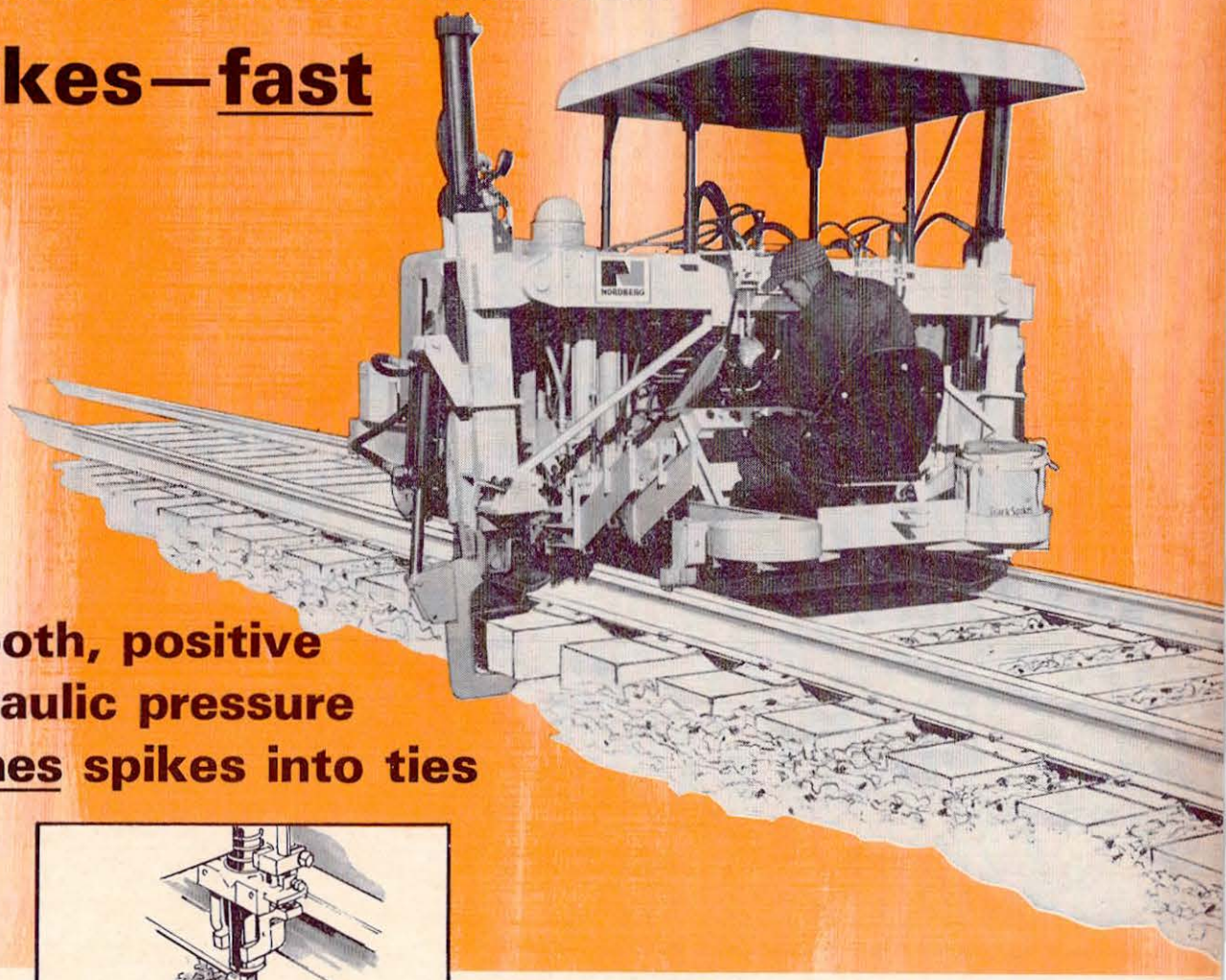
W. GRAHAM CLAYTOR, JR., PRESIDENT
Southern Railway System

"Devoted as we are on Southern to useful change, Southern Railway people welcome the information and insights brought to us weekly by the editors and writers of Railway Age.

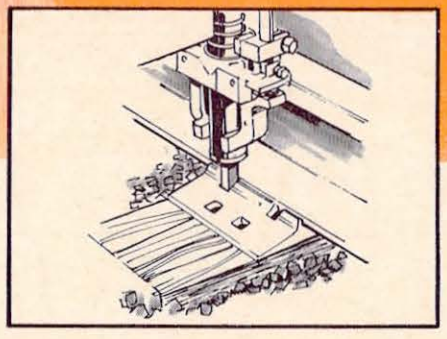
"Clarity, reliability, precision and readability make your magazine a very useful publication for busy railroad managers."

W. Graham Claytor

Nordberg® Hydra-Spiker drives rail or anchor spikes—fast



Smooth, positive hydraulic pressure pushes spikes into ties



Operator quickly spots the hydraulically propelled Hydra-Spiker over tie and grips the ends. He then activates individually controlled spiking guns, that are magazine fed, to push spikes into ties.

Add a Hydra-Spiker to a tie gang and watch the work speed up! And if it's added to a *Nordberg* tie gang, which includes the Hydraulic Spike Puller, Tie Axe, Scarifier-Inserter and Plate Placer, then you've got a combination that just can't be beat.

The Nordberg Hydra-Spiker is the only machine that uses smooth, continuous pressure (2500 psi) to literally *push* rail or anchor spikes in any size tie plate—or in any spike hole punching without leaving even a mark on the head.

Information about the speedy, versatile Nordberg Hydra-Spiker . . . or any of the other "Mechanical Muscles" from Nordberg is yours for the asking.

NORDBERG MANUFACTURING COMPANY / MILWAUKEE, WISCONSIN 53201

NORDBERG

MECHANICAL MUSCLES®

©1968, N. M. CO.

R368

Circle 13 on reader service coupon

Circle 14 on reader service coupon ►

You know who to call to order Motran railroad radio.

BUT WHAT ABOUT POCKET PAGERS? OR MICROWAVE? AND EVERYTHING IN-BETWEEN?

And there's a lot in-between. Running a railroad today is a complicated business that requires sophisticated communications equipment to keep the stock rolling. Motorola is familiar with the communications problem unique to modern railroad operations. The wide acceptance of the MOTRAN railroad 2-way radio has demonstrated this. And the same engineering skills, performance standards and back up service that made MOTRAN radio possible also bring you the industry's most complete line of communications equipment. No matter if you need just one product. Or a whole system of inter-related and coordinated communications. Here are some typical examples of why you'll want to consider Motorola in all your communications plans.

See Motorola in Booth 205 during the R.E.-M.S. Exhibit

MEMBER RPI RAILWAY PROGRESS INSTITUTE

CENTRALIZED CONTROL

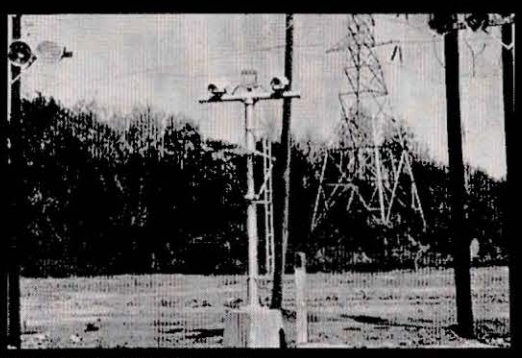
Specially designed control consoles centralize communications at one place for increased ability to take action. Incoming radio and visual information can be handled at one place from a remote point. These consoles are equipped to meet your precise needs, and have proved invaluable in bringing new efficiencies to communications throughout railroad operations.

RADIO PAGING

Finds your people fast. Pocket-size pagers deliver a voice message. Worn in pocket or on belt by your maintenance and other key people in shops, yards, buildings and grounds. Locates them individually, instantly. Paging can be easily added to your present yard radio system.

PORTABLE 2-WAY RADIOS

Maintenance of Way gangs use these, with repeater stations, and greatly increase productivity. Allows communications with oncoming trains at distances of 10 to 30 miles. Almost endless uses for portable communications throughout the entire railroad operation, both inside and out of doors.



CLOSED CIRCUIT TV

Provides better control of activities in the yards, increased security everywhere, and remote observation of freight handling at terminals. Solid-state cameras designed for rugged, outdoor environment applications. Pole mounted at strategic locations they transmit visual information to centralized control points, such as train consists, security areas, freight terminal surveillance and people activities.

MOBILE RADIO

Helps your maintenance trucks do more in less time. Complete line of solid-state 2-way FM radios. Puts you in touch with your crews, no matter where they are on the railroad.

MICROWAVE

Motorola MR 300 microwave incorporates all the best engineering features of all microwave equipment. Plus a unique TDA feature that improves per-path performance of signals and increases signal range. It also helps screen out "noise" and gives better reception. High density, 600-channel SSB-SC, or equivalent, capacity.

Motorola offers other equipment that can help you in other ways. Car Telephone (the standard of the telephone industry) is one. Completely new, all solid-state base stations are available. Plus hundreds of important accessories for greater flexibility. Your Motorola Man is prepared to help you. Call him in today for additional information. Or ask him to survey your needs. Motorola Communications and Electronics Inc., 4935 West LeMoyne Street, Chicago, Illinois 60651. A Subsidiary of Motorola Inc.

MOTOROLA

TOTAL RAILROAD COMMUNICATIONS

Great

Northern Railway

The Goat and the Pellet create a new era of progress.

Once the flow of raw iron ore from Minnesota's famous Mesabi Range was seasonal. Great Northern, working closely with major iron mining companies in the area, changed all that. The answer was the taconite pellet.

While the mining companies were building sophisticated new plants for processing the iron-rich pellets, Great Northern was investing more than 8 million dollars in transportation and handling facilities. Miles of new track. 200 specially-equipped cars. An expenditure in time and money designed to create a new era of progress.

Now, there is a year-round flow of taconite pellets to the bustling port of Superior, Wisconsin. 15,000 tons of pellets per train. Destined for the steel furnaces of America.

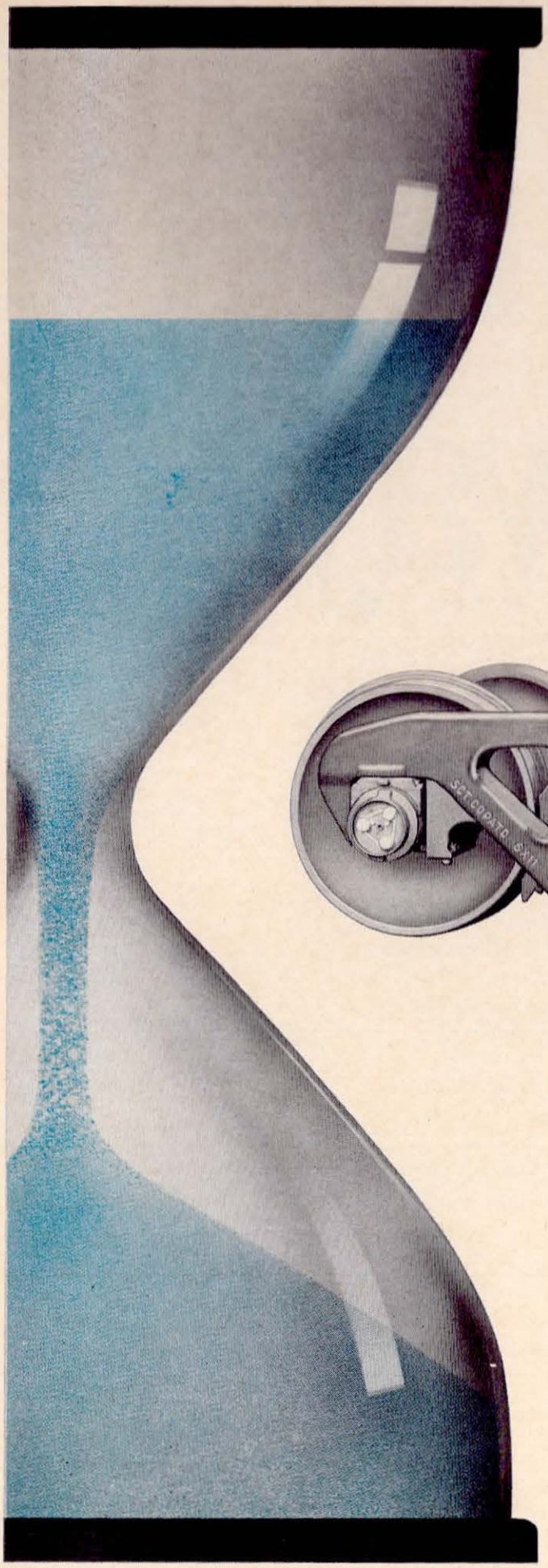
As the Great Northern works to solve problems of its customers, American Oil is there to lend a hand. American Oil keeps pace with the nation's progressive and creative railroads by offering technical assistance and convenient supply points for diesel fuels and lubricants.

American Oil Company, Chicago, Illinois 60680. "You expect more from American and you get it.*"

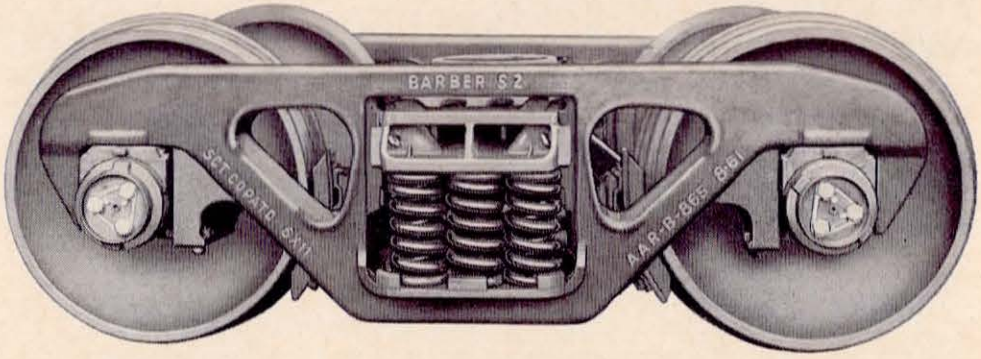
AMERICAN

© 1968 The American Oil Company, Chicago, Ill. *Trademark

Circle 16 on reader service coupon



IS LONGER LIFE *THE REASON FOR* BUYING BARBER STABILIZED TRUCKS?



...IT'S ONLY ONE

It's important, but so are the other major benefits that result from "Total Design Concept." Remember Barber Stabilized Trucks also provide greater lading protection, lower maintenance and lower first cost.

"Talk to the Man from Barber"

BARBER STANDARD CAR TRUCK COMPANY
CHICAGO • PHILADELPHIA • MONTREAL

3718

Circle 17 on reader service coupon

N&W wins tax case in High Court

The United States Supreme Court has condemned rigid use by states of the so-called mileage formula for taxing railroad rolling stock, if such use leads to "a grossly distorted result." The condemnation came in a case involving Norfolk & Western's appeal from a decision of the Missouri Supreme Court which upheld use of the formula by the Missouri Tax Commission.

The formula provides that rolling stock of interstate railroads shall be assessed on the basis of a valuation which bears the same relationship to the fleet's total valuation as the mileage of road in Missouri bears to the mileage of the carrier's whole system. N&W got involved when it leased the Wabash. Application of the formula produced a taxable value of $19,981,757 for its rolling stock in Missouri. Before the lease, the Missouri assessment against Wabash's rolling stock was only $9,177,683.

The Supreme Court's 8-to-1 decision (Justice Hugo Black dissented) was embodied in an opinion by Justice Abe Fortas. He noted that the Court has often upheld mileage formulas, so a railroad challenging the results reached by the application of them "has a heavy burden." The Court added: "It is confronted by the vastness of the state's taxing power and the latitude that the exercise of that power must be given before it encounters constitutional restraints. Its task is to show that application of the mileage method in its case has resulted in such gross over-reaching, beyond the values represented by the interstate assets purported to be taxed, as to violate the Due Process and Commerce clauses of the constitution."

N&W met the burden "and the state has made no effort to offset the convincing case they have made," the Court continued. Its remand order, however, will permit the Missouri courts to give the state a chance to produce offsetting evidence if it so desires. Such evidence, if offered, might rely on the so-called "enhancement" theory of valuation. Though not mentioned by the Tax Commission, this theory was advanced by the Missouri court which said a state tax may cover any enhanced value which comes to rolling stock in the state because of its connection with a large interstate railroad system. ■

LUTHER MILLER

AS THE EDITOR SEES IT

A LAYMAN LOOKS AT THE RATE CASE—To the average citizen, railroad arguments for a rate increase (or any kind of relief requiring the approval of a public authority) must often sound like a variation on that old wedding theme—something old, very little new, something borrowed, and something very blue. That, at least, is how the current railroad rate case strikes John Cunniff of the Associated Press.

WHAT, AGAIN?—In a widely-published article Mr. Cunniff recites what he clearly believes to be a damning sequence of events. Railroads (he says) have insisted that they must cut passenger runs—to trim costs. Railroads have fought for the right to merge—to increase efficiency. Railroads last year sought and won a 3% rate increase—to shore up sagging profits. In view of all this, the AP's man asks, "Don't suggestions of the need for higher prices have an old, familiar and peculiar ring?"

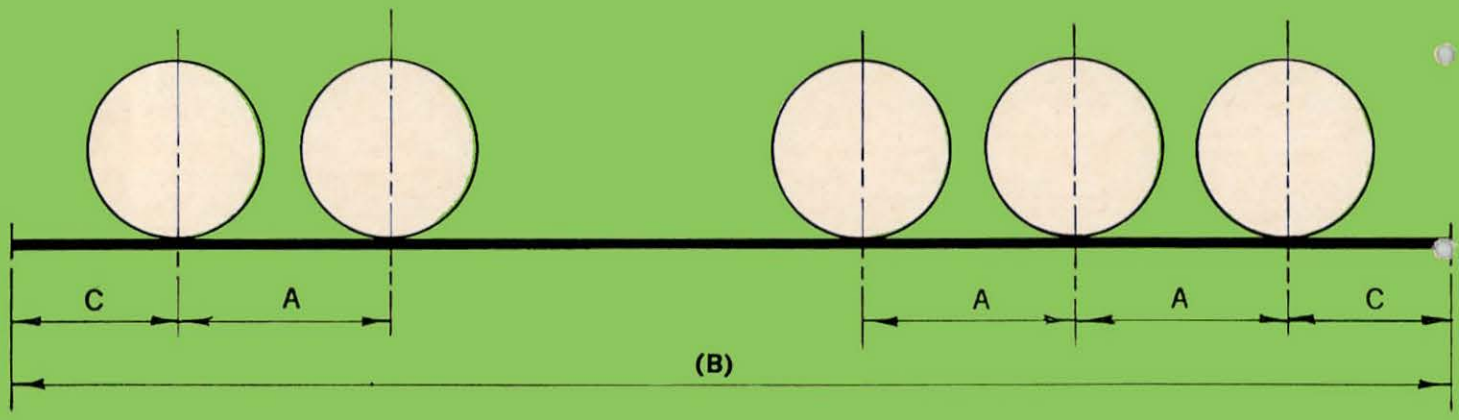
A HALF-TOLD TALE—Mr. Cunniff did his homework, but only a part of it. He failed to say that with all of the "relief" won so far, the railroads in 1967 had a rate of return on investment of only 2.46%. (If the 3% increase had been in effect the entire year, the rate of return would have been 2.99%—still less than half of the minimum return regarded as healthy by other regulated industries.) He also failed to mention that prior to last year's modest increase, railroad freight charges had actually declined by 13% during the preceding decade.

RAILROADS vs. SOCIETY?—Mr. Cunniff raises this baffling (and troubling) question: Has the federal government "been overwhelmed by an overpouring of evidence, testimony and plain propaganda into viewing the immediate profit-plight of the rails as more important than the long-range requirements of society?"

ON THE CONTRARY—The answer, it seems to us, is obvious: Only profitable railroads can meet the long-range transportation requirements of society. (Those who think that in the interests of "society" railroads should be nationalized had better look at the British experience. British "society" is saddled with an annual railroad deficit of several hundred million dollars.) To keep our railroads profitable—to restore them to full health—is going to require more mergers, more rationalization of passenger service, maybe even more rate increases as wages and prices soar. Convincing people like the AP's man that the railroad profit motive is far from inimical to "the long-range requirements of society" must remain one of our major goals.

Heavier car loads put new

FIG. 1. RECOMMENDED WEIGHT AND AXLE SPACING CRITERIA



MAXIMUM TRACK LOAD (LBS.)		MINIMUM DIMENSIONS			
Per car	Per axle	Axle centers (A)	Coupled length (B)	End axle to coupling line (C)	Wheel diameter
4-WHEEL TRUCKS					
263,000	65,750	5′10″	43′10″	3′3½″	36″
6-WHEEL TRUCKS					
315,000	52,500	4′6″	55′	3′9″	30″
360,000	60,000	5′0″	60′	4′6″	33″
394,500	65,750	5′6″	65′9″	5′0″	36″

Weight of rail in all main track for Class I railroads in the United States as of December 31, 1966

RAIL WEIGHT PER YARD	MILES OF MAIN TRACK	PERCENT OF TOTAL MILEAGE	ACCUMULATIVE PERCENT
Under 80	23,636	10.6	10.6
80- 89	23,081	10.3	20.9
90- 99	30,743	13.8	34.7
100-109	27,262	12.2	46.9
110-119	57,375	25.5	72.4
120-129	6,852	3.0	75.4
130-139	50,398	22.4	97.8
Over 139	4,888	2.2	100.0
TOTAL MILES	**224,235**	**100.0**	

pressure on track upkeep

By G. M. MAGEE
Assistant Vice President—Research
Association of American Railroads

Modern traffic demands have posed some serious problems for railway maintenance officers — and railway managements, too. One of these is the operation of heavier freight cars which have been invaluable in attracting new traffic and holding existing traffic on the rails, but impose heavier loading on track and structures.

Several years ago a large chemical company made an exhaustive study to determine the most economical type of car for the transportation of one of its products. The result of this study was a 125-ton tank car having 315,000-lb rail weight carried on two four-wheel trucks with 38-inch-diameter wheels (pressure on the rail of 1036 lb. per inch of wheel diameter).

● **What maximum weight?** Operation of this car had to be handled by agreement with the railroads involved. But the chemical company desired to have a car that could be handled as a general interchange car. There were railroads that could not handle a car of this weight over their tracks and bridges, except in limited territories. Accordingly, the AAR appointed to study this matter a joint committee consisting of representatives from the Engineering Division, the Mechanical Division and the Joint Committee on Relation Between Track and Equipment. The committee was instructed to develop recommendations for the maximum weight of car that could be handled as a general interchange car, taking into account both the mechanical factors and the engineering factors involved. After due consideration of these factors, the joint committee recommended that, for a car acceptable for unrestricted interchange service, the axle load should not exceed 65,750 lb. per axle on 36-inch-diameter wheels (915 lb. per inch of wheel diameter) and the weight per foot of coupled car length should not exceed 6,000 lb. These loadings would provide for a 100-ton-capacity car.

These general limitations, coupled with specific limitations on axle spacings and distance from end wheel to coupling line, as shown in Fig. 1, served to keep within acceptable limits the contract pressures of wheel on rail, the bending stresses in rail now in track, and the loading of existing bridges. Recognizing the economic advantages of larger-capacity cars, the joint committee pointed out "that as individual railroads increase their load-carrying capacity through installation of heavier rail and changes in structures they will need only to change the listing in Railway Line Clearances to show this increased ability, and at the proper time in the future limitations herein recommended can again be reviewed and altered as desired."

The joint committee recommendations were adopted and implemented by incorporating them in the Specifications for Design, Fabrication and Construction of Freight Cars, in the Interchange Rules, the Railway Line Clearances, Official Railway Equipment Register, and the AAR Mechanical Division Manual of Standards and Recommended Practices. In each instance it was stated that cars having axle loads heavier than 65,750 lb. may be operated under controlled conditions where special agreement has been reached between the participating railroads.

● **Problems for M/W officers.** While the new regulations provide for axle loadings that are within acceptable limits, it is a fact that these limits provide for somewhat higher loadings on the track than most roads had previously allowed. What then can railway maintenance officers do in order to most effectively meet this challenge of increasing weight of cars with what they have and can get to work with?

First, the different segments of the railway must be examined with respect to carrying capacity of track and structures. Perhaps improvements can be made within the available budget, or other appropriate measures can be taken to make a portion of the line suitable for heavier cars. When this work is completed the railway will then denote, in Railway Line Clearances, the loads that can be handled between different points of origin and destination.

An accompanying table shows the miles of all main track for Class I railroads in the United States, classified with respect to weight of rail as of Dec. 31, 1966. It will be noted that, as of that date, there were 10.6% of main-line track laid with rail under 80 lb. per yard; 20.9%, under 90 lb. per yard; and 34.7% under 100 lb. per yard. A suggested method of calculating rail flexural stresses as a guide to determining the axle loading that can be carried over it is available from the Research Center.

● **Loads on bridges.** With respect to bridge structures, data are not avail-

able on the number of bridges or total length classified with respect to the Cooper's loading they are rated to carry. Fig. 2 gives the calculated equivalent Cooper's rating based on the bending moment at mid span for a 100-ton car with a 43-foot 10-inch coupled length (approximately 6,000 lb. per foot). It is only at span lengths below 10 feet that this car rates above an E-60. At span lengths from 60 feet to 200 feet, it rates E-50 or below. As span lengths increase beyond 200 feet, it approaches an E-60 rating.

For portions of the line where the loads to be carried approach the carrying capacity, there are several practical measures that can be taken which will be helpful. Periodic inspection of, and necessary repairs to, all bridge structures should be made as needed to maintain the integrity of their carrying strength. If necessary, speed restrictions should be placed in order for the rated carrying capacity of the bridge to conform to the wheel loadings to be imposed.

• **Protecting the rail.** The integrity of the rail is also of prime importance. Periodic operation of rail-defect-detector cars and ultrasonic testing equipment is needed to insure this. The time interval at which such equipment should be operated can best be determined by experience. This time interval should be selected so the number of service failures that develop are minimized. The cost of operating rail-defect-detection equipment and removing rails with detected defects from track before a service failure occurs is small compared to the probable cost of a derailment that might result from a service failure.

Generally, rail-defect-detection cars for locating defects in rail heads are operated on main-line track once a year. In some areas, such cars are operated twice a year, or even each month, if the frequency of occurrence of rail defects warrants. Ultrasonic equipment for detecting defects in the rail web, such as bolt-hole cracks and head-and-web separations, can usually be operated less frequently. These types of failures are progressive fractures that usually develop more slowly. Here again, however, service experience is the best guide.

• **Track inspection vital.** On such lines, inspection of the track for "riding condition" is also important. Irregularities in line, surface and cross level result in impact effects that increase the loading on the track structure. On a line laid with light-weight rail and carrying a relatively small traffic density, obviously the amount of money that can be spent for smoothing and lining track is limited. Fortunately, with modern mechanized equipment this work can be done at relatively low cost. Efforts should be made to correct conditions that might be expected to produce appreciable dynamic increases in wheel loading.

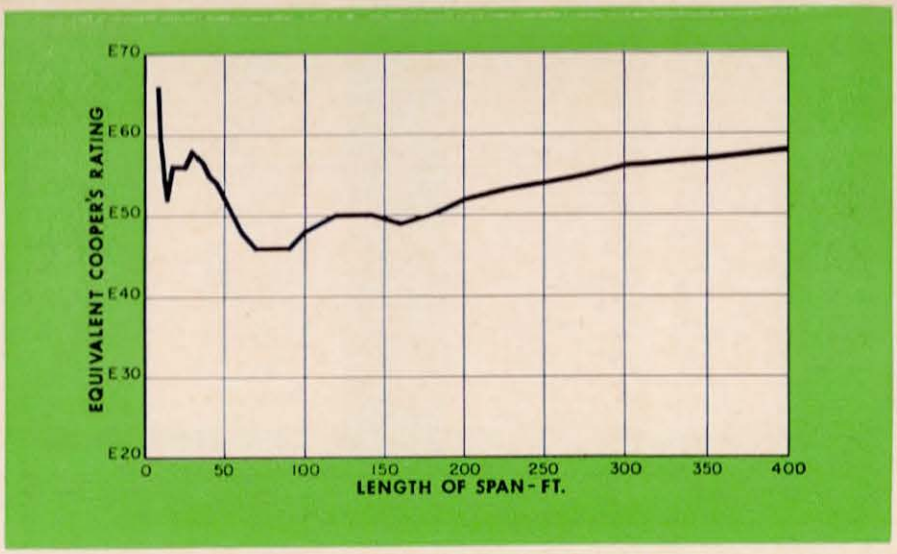


FIG. 2—MEASURING BENDING IN A BRIDGE

The calculation shows the equivalent Cooper's rating for a 100-ton car, having a rail weight of 263,000 lb., and coupled length of 43 feet 10 inches.

The necessary inspection can and should be made in a number of ways. The roadmaster or track supervisor should ride over the track periodically, in locomotives and passenger cars or cabooses. In addition to noting what he feels, that is, the "riding comfort," which is indicative of impact effects, he should also watch the cars ahead (or behind) him to detect excessive roll action which may be the result of low joints or centerbound track. Assistance from train crews should also be enlisted. This gives a much more frequent inspection of the track, and their cooperation should be freely given as it is in their own best interests.

• **Watch for rolling.** Maintenance of way personnel should also be instructed to watch for and report any condition of excessive roll or lurch that might be observed on passing trains. Flat spots on wheels can be detected by the impact noise they make when they strike the rail. Long flat spots are noisy and produce high impact effects. It is important that they be reported as promptly as possible.

Another important condition to inspect in the track structure is track gauge and guardrail gauge at crossings, and particularly at turnouts. This can best be done by walking the track or riding over it at slow speed on a motor car. Wide gauge can usually be determined by noting whether any movement of tie plates on ties is indicated. Sometimes it can be detected by noting a variation in the alignment of the rail. At turnouts, observation should be made to determine whether wheel flanges are striking the frog point, an indication of improper guardrail gauge; or whether the wheels are hitting the flares on the guard rails too heavily, an indication of wide track gauge or improper guardrail gauge.

• **Light rail and tie support.** There are additional measures that can be taken to maximize the bending strength of the rail. If it is necessary to operate heavy cars over lightweight rail, it is important that each tie provide a reasonably good rail support. Measurements of rail bending stress—made years ago by Dr. A. N. Talbot, as chairman of the Special Committee on Stresses in Railroad Track—indicated that the bending stress in the rail could be increased by 25% due to poor condition of rail support. Obviously, it could be increased by much more than that depending upon how poor a support is provided. Theoretically, with ties spaced on 20-inch centers, if one tie were offering no support to the rail the bending stress in the rail would be increased by about 35%. Thus, it is apparent that a reasonably good tie condition can be a big help to the rail.

Instability of the roadbed can also increase bending stress in the rail. If such areas are noted from observation of the "riding comfort" or in visual indication of settlement in the track surface, or "squeezes" in the adjoining roadway, suitable corrective measures should be taken to provide a stable roadbed support. These might include grouting, restraining piling, or better drainage—whichever the local conditions indicate would be most effective.

Wear of rail also reduces its bending strength. Generally, about the only lo-

FIG. 3—NEW RAIL LAID IN REPLACEMENT

Figures on the net tons of new rail laid in replacement on Class I roads (1921-1966) reveal a low level of activity since 1957.

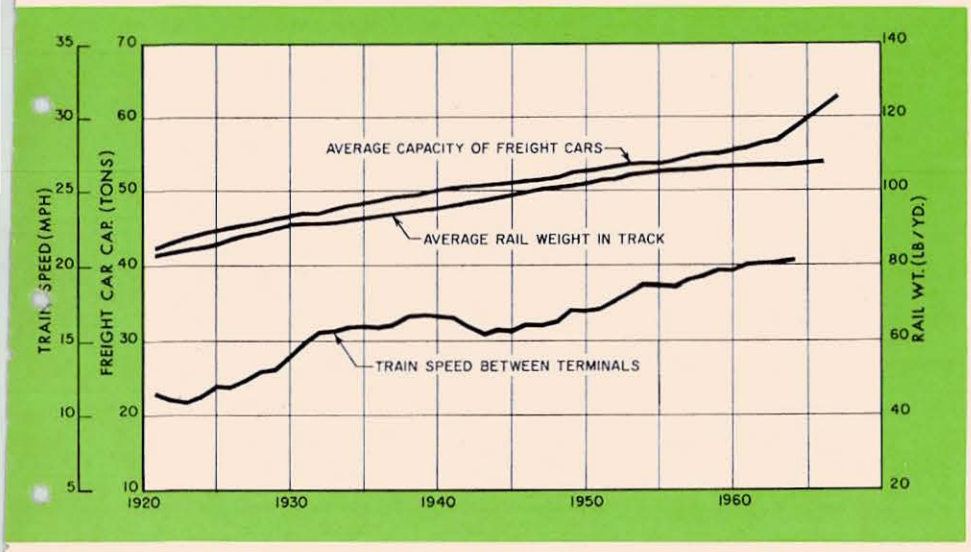


FIG. 4—DEMANDS ON RAILS HAVE INCREASED

Since 1921 rail weight, car capacity and train speeds have increased substantially, placing new emphasis on track strength and maintenance.

cation where enough metal will be lost by wear to affect the bending strength significantly will be on the high rail of curves. A typical flange-wear pattern of the high rail, in which the width of head is reduced one-half inch at the gauging point for 85-lb. rail, will reduce the section modulus and increase the bending stress by about 6% about the base and 18% about the head. On the low rail of curves, the place to watch for signs of incipient rail failure is in the upper fillet on the gage side for head-and-web separations. These can be located visually by periodic observations with mirrors, but more easily, effectively, and economically with the ultrasonic equipment.

● **Replace worn joint bars.** The rail joint is, of course, the weakest point in the track structure. Joint bars should be replaced with new or reformed bars if the amount of wear is such that they bear against the rail web and no longer can be tightened to provide a tight fishing-surface fit. In fact, there is economic justification to replace them before this much wear develops. Joint-bar wear develops on the top of the bars near their mid-length and on the bottom of the bars near their ends. Thus, as joint bars become worn when the track bolts are tightened the rail ends are pulled down at the middle to take up the wear, thus tending to create a low joint condition.

The worn joint bars are in effect working to produce the very condition that is least desirable—a low joint. When the amount of wear progresses to where the joints cannot be kept up with reasonable cost, the bars should be replaced or bent up with mechanized equipment made for this purpose.

It is, of course, important to keep the joint ties tamped because they must help the rail joint support the wheel loads. A pair of rail joint bars is only about one-half as strong as the rail. Obviously, then, the joint ties are called on to provide added rail support, and these ties must carry more load than the intervening ties. It is, therefore, important that joint ties be sound and well tamped to take this extra burden.

● **Heavy rail "fan."** I have been a "fan" for heavy rail ever since 1928 when, under the direction of A. N. Reece, then chief engineer of the Kansas City Southern, I conducted a study on the economical selection of rail for that road. Although the railway had an average annual traffic density of only about five million gross tons, that study indicated a rail weighing 137 lb. per yard would be the most economical—when rail and tie life, cost of track and equipment maintenance and cost of train operation were all taken into account. Accordingly, the 127-lb. Dudley rail section was selected for use as being the most economically designed section available at that time in that weight class.

Today the KCS main line from Kansas City to DeQueen, Ark. is laid with the 127-lb. Dudley section or the 136-lb. NYC section that superseded it, and with 112-, 115-, or 136-lb. rail from DeQueen to Port Arthur, Tex.

In 1967 the KCS had a maintenance-of-way ratio of 9.32%, which I believe has in no small part been made possible by the use of this heavy rail, coupled, of course, with mechanization of work equipment and efficient management and supervision of track-maintenance work. I know of no other material than rail that can be bought by a railway, used for 50 or more years, and sold as scrap for almost as much, and sometimes for more, than was paid for it when it was purchased new.

● **What welded rail does.** It has been the general practice on railroads to buy heavier rail when rail replacements are made—to relay 90- or 100-lb. rail with 115- or 119-lb. and 110- and 112-lb. rail with 132- or 136-lb. At the present time, 140-lb. rail is the heaviest section being laid and I know of no thought being given to the use of a heavier rail. In fact, the former Pennsylvania Railroad decided some years ago to go to 140-lb. rail as standard for heaviest duty lines in lieu of its 155-lb. section.

With the use of continuous-welded

STRONG, SMOOTH TRACK

Continuous welded rail eliminates joints, and the present heavy rail sections undoubtedly provide adequate bending strength, says AAR's Magee.

rail and elimination of the relative weakness at rail joints, the present heavy rail sections undoubtedly provide adequate bending strength, and in fact the need for heavy rail in high-speed heavy-duty main line was not for bending strength but for economy in track maintenance required to provide smooth surface, good alignment, and uniform cross level. Continuous welded rail has gone a long way towards reducing track-maintenance costs, much of which was for the rail-joint maintenance that continuous welded rail has eliminated.

● **More rail 'helpful.'** I believe that the size of our rail sections, and their strength and stiffness, are adequate to carry the heavier cars now coming into use. But it would be very helpful if circumstances would permit a larger quantity of rail to be laid each year. Fig. 3 shows the net tons of new rail laid in replacement per year on Class I railroads from 1921 to 1966, inclusive. It will be noted that, since 1957, new rail laid in replacement has been at a relatively low level.

For the ten years from 1957 to 1966, inclusive, the average new rail laid in replacement was 431,771 net tons a year. If we assume that the average weight of new rail laid is 217 net tons a mile (123.5 lb. per yard), then for this same period the average new rail replacement is about 2,000 track-miles per year. On this basis of renewal it would require about 165 years to replace the rail in all tracks. This would mean a total rail life of this amount would have to be obtained in first location, and as subsequently cascaded down to branch lines, yard tracks and sidings. Also, the life of rail in main track would have to be on the order of 115 years. It should be recognized that some benefit has been obtained by salvaging rail from tracks that have been taken up, and also from the recently adopted practice of cropping and continuously welding good-quality relay rail.

It is of interest to note in Fig. 4 the trend from 1921 to 1964 in rail weight, car capacity, and average train speed between terminals. There has been a continuing increase in the average weight of rail in track, the rate of increase depending upon the amount of new rail laid. The section modulus about the base of rail is indicative of the stresses developed from bending moment under wheel loads. The section modulus and weight have about the same ratio for the different rail sizes. So the rail weight may also be considered an index of its bending strength.

It will be noted from Fig. 4 that the average capacity of freight cars has also been increasing at about the same rate as rail weight, from 1921 up until about 1960. Since 1960 the average capacity (and loaded weight) of freight cars has increased at a noteworthy rate compared with that for the preceding forty years.

● **Effect of higher speeds.** An increase in train speed also places somewhat heavier demands upon the track structure, not only for strength but also for a higher standard of maintenance with respect to line, surface and cross level. Fig. 4 shows that the trend of average train speed between terminals increased sharply from 1923 to 1932. It leveled off, and in fact decreased some, during World War II, and since 1945 has shown a fairly uniform rate of increase from year to year.

It is difficult to judge whether available funds can be spent more profitably for new rail, new freight cars, new locomotives, or other equipment or facilities. The best data available on maintenance savings that can be effected with heavier rail are afforded in a service test on the Illinois Central, in which 20 miles of 112-lb. new rail and 20 miles of 131-lb. new rail were laid in two test sections in the same main-line track and adjoining each other. The average annual traffic density was 25 million gross tons. Maintenance costs were carefully kept. It was concluded that, taking into account interest at 6% on the added investment, the net average savings per mile per year for the 131-lb. rail compared with the 112-lb. was $564, or 16.6%.

This reflects only the benefits in the first installation in the main track. I have heard the statement from several chief engineers that when they are able to get heavy relay rail in their secondary tracks they can forget about those tracks. A track-mile of new rail costs about the same as a modern freight car. There are advantages in economy of transportation and attraction of traffic with modern high-capacity freight cars. There are also appreciable advantages to be obtained with continuous welded heavy rail in obtaining the most efficient and profitable operation of these cars. ■

AREA CONVENTION PROGRAM

March 19-21, 1968, Palmer House, Chicago

• *Indicates special feature*

TUESDAY MORNING, March 19, 9:30 to 12:00—Red Lacquer Room

Presidential Address—T. B. Hutcheson

Reports of Executive Secretary, Earl W. Hodgkins and Treasurer A. B. Hillman, Jr.

- *Keynote Address*—R. R. Manion, vice president, Operations and Maintenance Department, AAR
- *Address*—"Railroad engineering from a new vantage point," by A. Scheffer Lang, federal railroad administrator, U.S. Department of Transportation
- *Address*—"BART: A progress report" (Ill.), by B. R. Stokes, general manager, Bay Area Rapid Transit District

TUESDAY AFTERNOON, 1:30 to 5:00—Red Lacquer Room

Reports of Committees, Electricity, Contract Forms

- *Address*—"High-speed passenger service in the Northeast Corridor (Ill.), by J. W. Diffenderfer, assistant vice president, special services, Penn Central

Systems Engineering, Environmental Engineering, Highways

- *Address*—"Factors influencing safety at highway-railway grade crossings—A summary of recent research" (Ill.), by H. L. Michael, associate director, Joint Highway Research Project, and professor of highway engineering, Purdue University

Economics of Railway Location and Operation, Waterways and Harbors

- *Motion Picture*—"Container handling at ports—Today the 21st," produced by Port of New York Authority

WEDNESDAY MORNING, 9:00 to 11:50—Red Lacquer Room

Reports of Committees, Clearances

- *Panel discussion*—"Clearances and problems involved in computerizing them" (Ill.), Panel members: Dr. H. N. Laden, director of research services, Chesapeake & Ohio—Baltimore & Ohio; D. H. Shoemaker, chief engineer, Northern Pacific; D. E. Harmon, systems research officer, Southern; and R. H. Knittle, assistant engineer, Atchison, Topeka & Santa Fe

Iron and Steel Structures, Wood Bridges and Trestles

- *Address*—"The future of timber in railroad bridges" (Ill.), by M. J. Rhude, chairman, Research committee, American Institute of Timber Construction; Director of Timber Construction, Koppers Co.

Impact and Bridge Stresses, Cooperative Relations with Universities

- *Address*—"Goals of engineering education" (Ill.), by Dr. G. A. Hawkins, vice president for academic affairs, Purdue University

WEDNESDAY NOON, 12:00—Grand Ballroom

Annual luncheon

- *Address*—W. Thomas Rice, president and chief executive officer, Seaboard Coast Line

WEDNESDAY AFTERNOON, 2:00 to 5:00—Red Lacquer Room

Reports of Committees, Yards and Terminals

- *Address*—"The fabricated steel erection problems incident to the redevelopment of Penn Station in New York" (Ill.), by J. A. Sterner, project manager, Bethlehem Steel Corporation

Buildings, Masonry

- *Address*—"Admixtures for concrete" (Ill.), by A. K. Howe, chief engineer, Sika Chemical Corp.

Maintenance of Way Work Equipment, Economics of Railway Labor

- *Address*—"The design and construction of A. E. Perlman Yard (Ill.), by C. T. Popma, assistant vice president-engineering, Penn Central

THURSDAY MORNING, 9:00 to 12:10—Red Lacquer Room

Reports of Committees, Continuous Welded Rail

- *Address*—"Thermite welding practices of rail in the United States" (Ill.), by K. H. Kannowski, research engineer, Illinois Central

Rail, Ties and Wood Preservation, Roadway and Ballast

- *Address*—"Stress distribution in track structure" (Ill.), by R. M. Hardy, dean of engineering, University of Alberta

Track, Engineering and Valuation Records

- *Motion Picture*—"Construction of D&RGW line change, including negotiations between railroad and governmental agencies," with introductory remarks by J. B. Byars, assistant to chief engineer, Denver & Rio Grande Western

GUIDE TO THE REMSA EXHIBIT ►

Note these Simmons-Boardman services during Engineering Week

At the Palmer House . . .

Breakfast bar, serving fruit juices, rolls and coffee, 7:30 am to 9:30 am, Tuesday, Wednesday and Thursday. Let us help you start the day right. Convention floor.

At the Exhibit Hall . . .

Our booth, No. 105, is the information center for the REMSA exhibit. Want to locate someone? Need a travel reservation? Want to find a hospitality suite? Anything else? Let us help you.

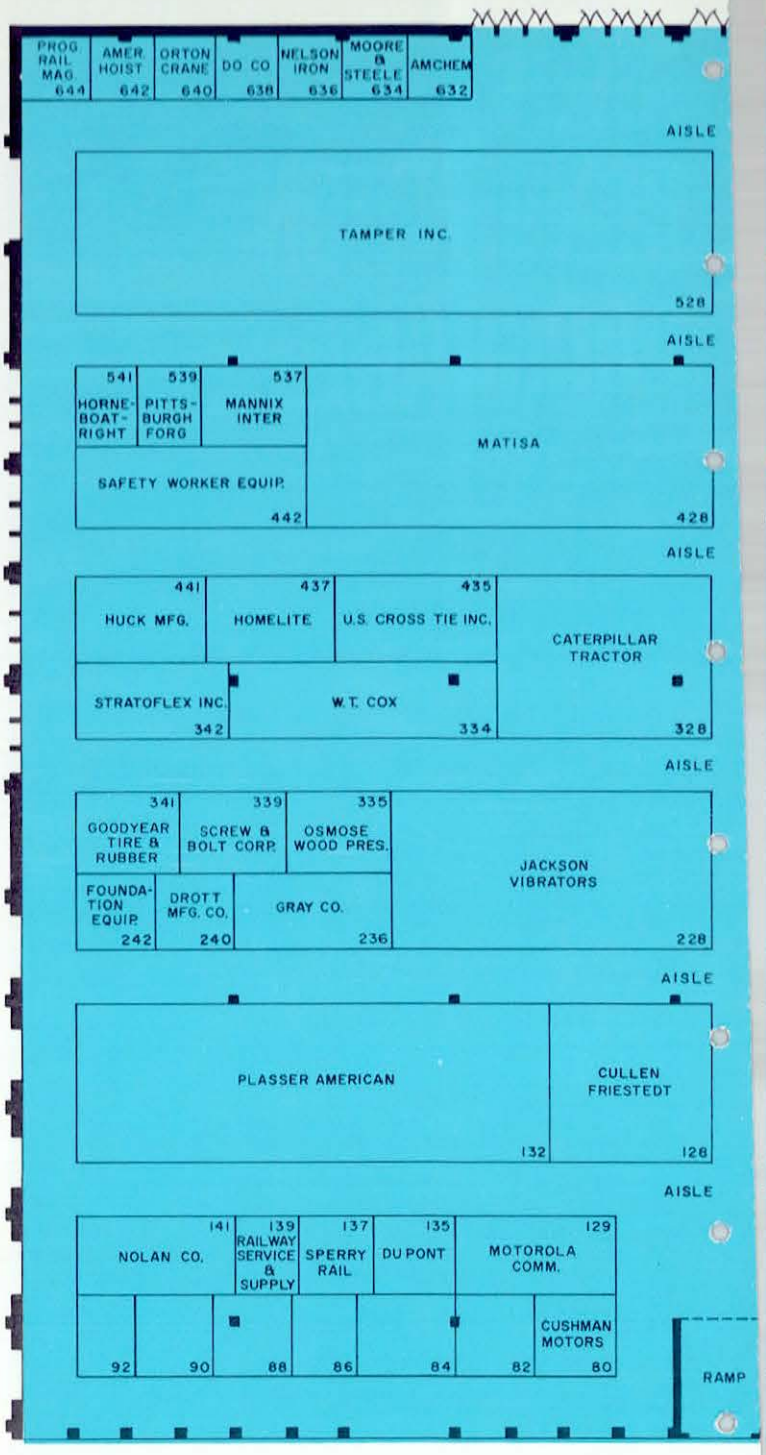
GUIDE TO THE REMSA EXHIBIT

WHO—Member companies of the Railway Engineering Maintenance Suppliers Association

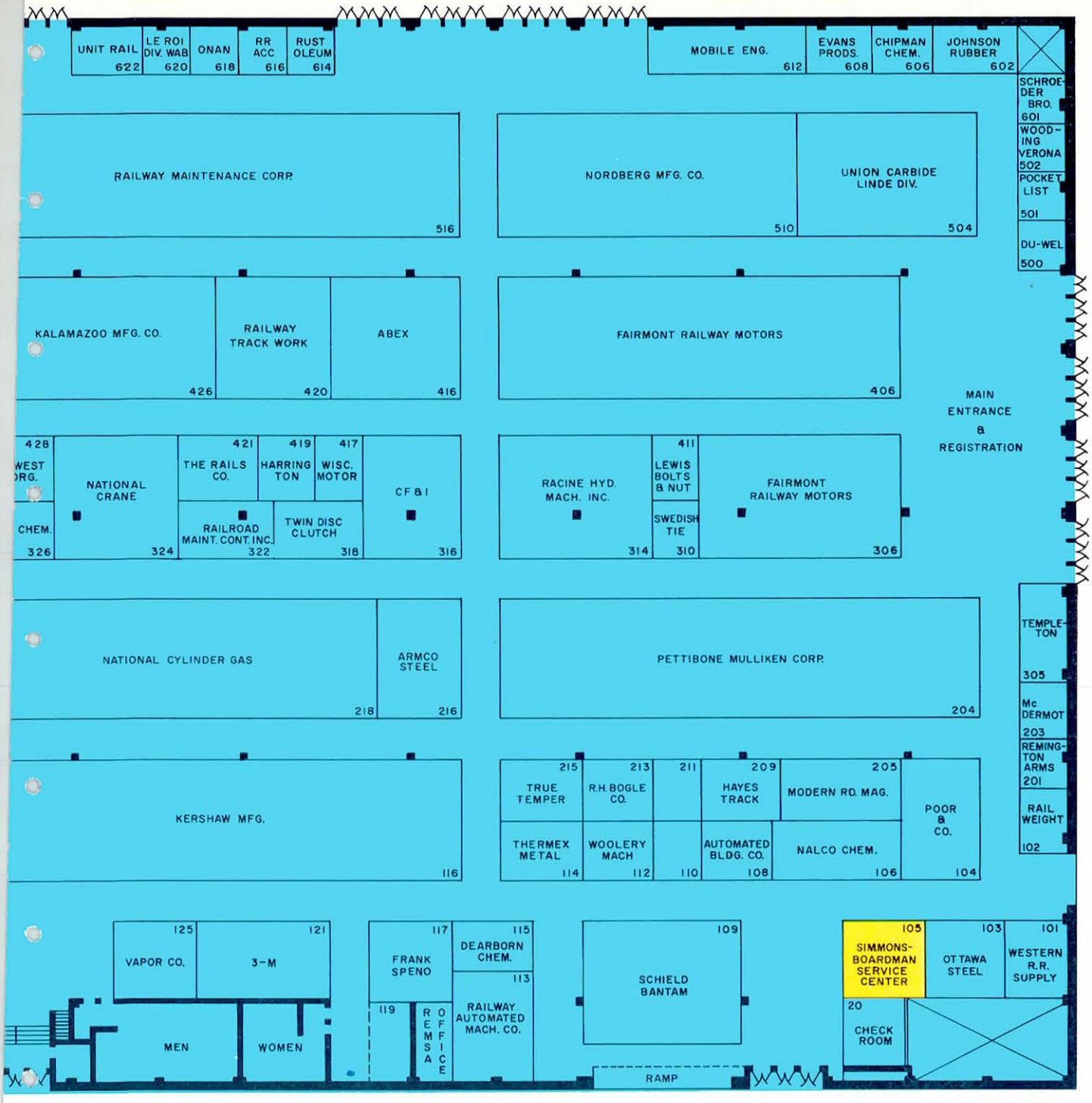
WHERE—International Amphitheatre, Chicago

WHEN—March 18, 19, 20, 21. Open 8:30 am to 5:00 pm each day except March 21 when exhibit will close at 4:00 pm

TRANSPORTATION—Free bus service at regular intervals from the convention hotel (Palmer House) beginning at 8:00 am each day



COMPANY	BOOTH
Abex Corp	416
Achuff Railway Supply Co.	94
Amchem Products, Inc.	632
American Hoist & Derrick Co.	614
American-Swedish Rail System, Inc.	310
Armco Steel Corp.	216
Automated Building Components, Inc.	108
Bogle, R. H. Co.	213
CF&I Steel Corp	316
Caterpillar Tractor Co.	328
Chipman Chemical Co., Inc.	606
Cox, W. T. Co.	334*
Cullen-Friestedt Co.	128
Cushman Motors	80
Dearborn Chemical Division, W. R. Grace & Co.	115
Joseph Dixon Crucible Co.	110
DO Co.	638
Drott Manufacturing Corp.	240
Du Pont de Nemours, E. I. & Co.	135
Du-Wel Steel Products Co.	500
Chicago Railway Equipment Div., Evans Products Company	608
Fairmont Railway Motors, Inc.	306-406
Foundation Equipment Corp.	242
Geigy Agricultural Chemicals	326
Goodyear Tire & Rubber Co.	341
Gray Company, Inc.	236
Harrington Manufacturing Co.	419
Hayes Track Appliance Co.	209
Homelite, a Textron Division	437
Horne-Boatright Chemical Co., Inc.	541
Huck Corp.	441
Jackson Vibrators, Inc.	228
Johnson Rubber Co.	602
Kalamazoo Manufacturing Co.	426
Kershaw Manufacturing Co., Inc.	116
Hogan, D. J. & Co.	620
Lewis Bolt & Nut Co.	411
LPS Research Laboratories, Inc.	644
Union Carbide Corp.	504
Mannix International Inc.	537
Matisa Equipment Corp.	428
Mid-West Forging & Mfg. Co.	425
Miles Laboratories	107
Mobile Engineering Co.	612
Modern Railroads	205
Moore & Steele Corp.	634
Motorola C&E, Inc.	129
McDermott, Julian A. Corp.	203
Nalco Chemical Co.	106
National Crane Corp.	324
National Cylinder Gas	218*
Nelson Co., Stanford C.	88
Nelson Iron Works, Inc.	636
Nolan Co., T.	141
Nordberg Manufacturing Co.	510
ONAN-Div. of Studebaker Corp.	618
Orton Crane Co.	640
Osmose Wood Preserving Co.	335
Ottawa Steel Products, Daybrook-Ottawa Corp.	103
Pettibone Mulliken Corp.	204
Pittsburgh Forgings Co.	539
Plasser American Corp.	132
Pocket List of RR Officials	501



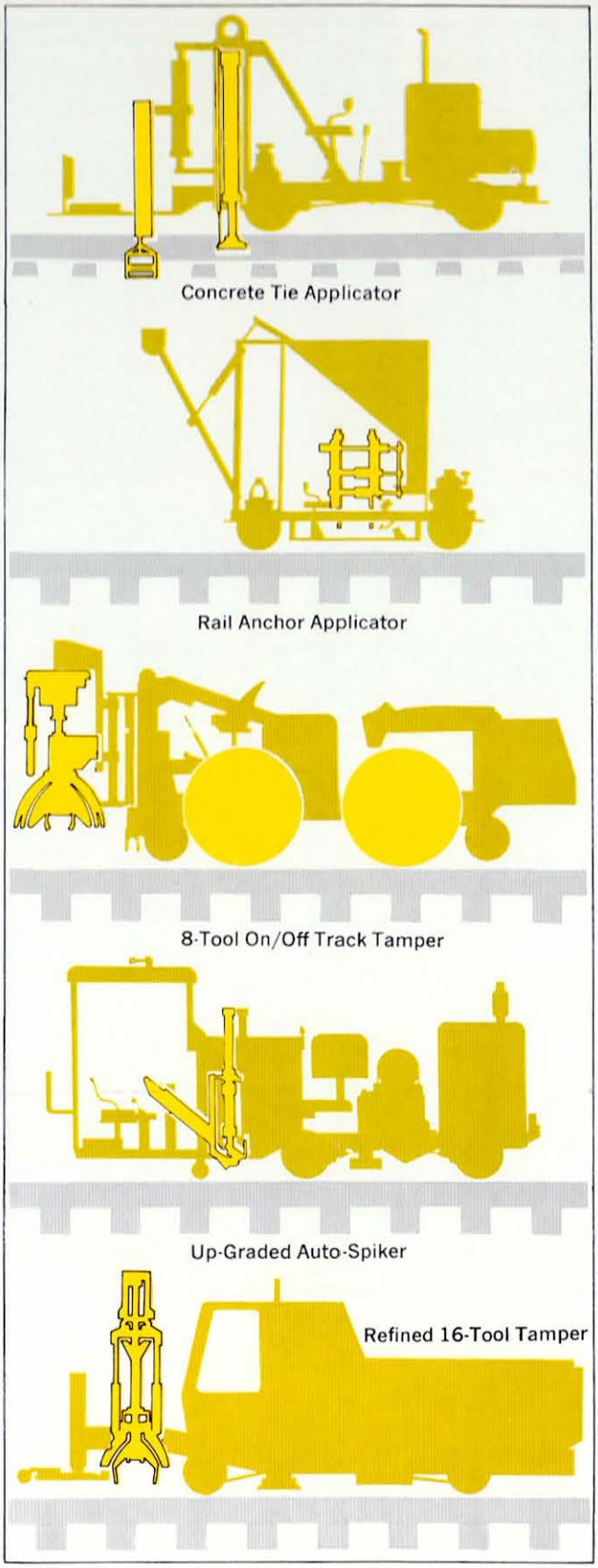
Poor & Co. 104
Progressive Railroading 82
Quaker City Railroad Sales Corp. 86
Racine Hydraulics, Inc. 314
Railroad Accessories Corp. 616
Railroad Maintenance & Construction, Inc. 322
Rails Co. 421
Railway Age—Railway Track & Structures—
Railway Purchases & Stores 105
Railway Automated Machinery Co. 113
Railway Maintenance Corp. 516
Railway Service & Supply Co. 139
Railway Track-Work Co. 420
Railweight, Inc. 102
Remington Arms Co. 201
Rust-Oleum Corp. 642
Safety Worker Equipment Co., Inc. 442
Schield Bantam Div. of Koehring Co. 109
Schroeder Brothers Corp. 601
Screw & Bolt Corp. of America 339
Secmafer, S. A. 92
Speno, Frank, Railroad Ballast Cleaning Co. 117*
Sperry Rail Service 137
Stratoflex, Inc. 342
Superior Graphite Co. 211
Tamper, Inc. 528
Templeton, Kenly & Co. 305
Thermex Metallurgical, Inc. 114
3M Co. 121
True Temper Corp. 215
Twin Disc Clutch Co. 318
U.S. Crosstie, Inc. 435
Unit Rail Anchor Co. 622
Vapor Corp. 125
Western Railroad Supply Co. 101
Wisconsin Motor Corp. 417
Woodings-Verona Tool Works 502
Woolery Machine Co. 112

*Also outside exhibit.

Will You See Our 31st Innovation?

How about our 35th?

Since 1950 RMC has introduced 30 major track maintenance machines . . . and we'll have five more to show you in Chicago in March, at the Exhibition of Railway Engineering-Maintenance Suppliers Association. We hope to see you. Booth No. 516.



RMC

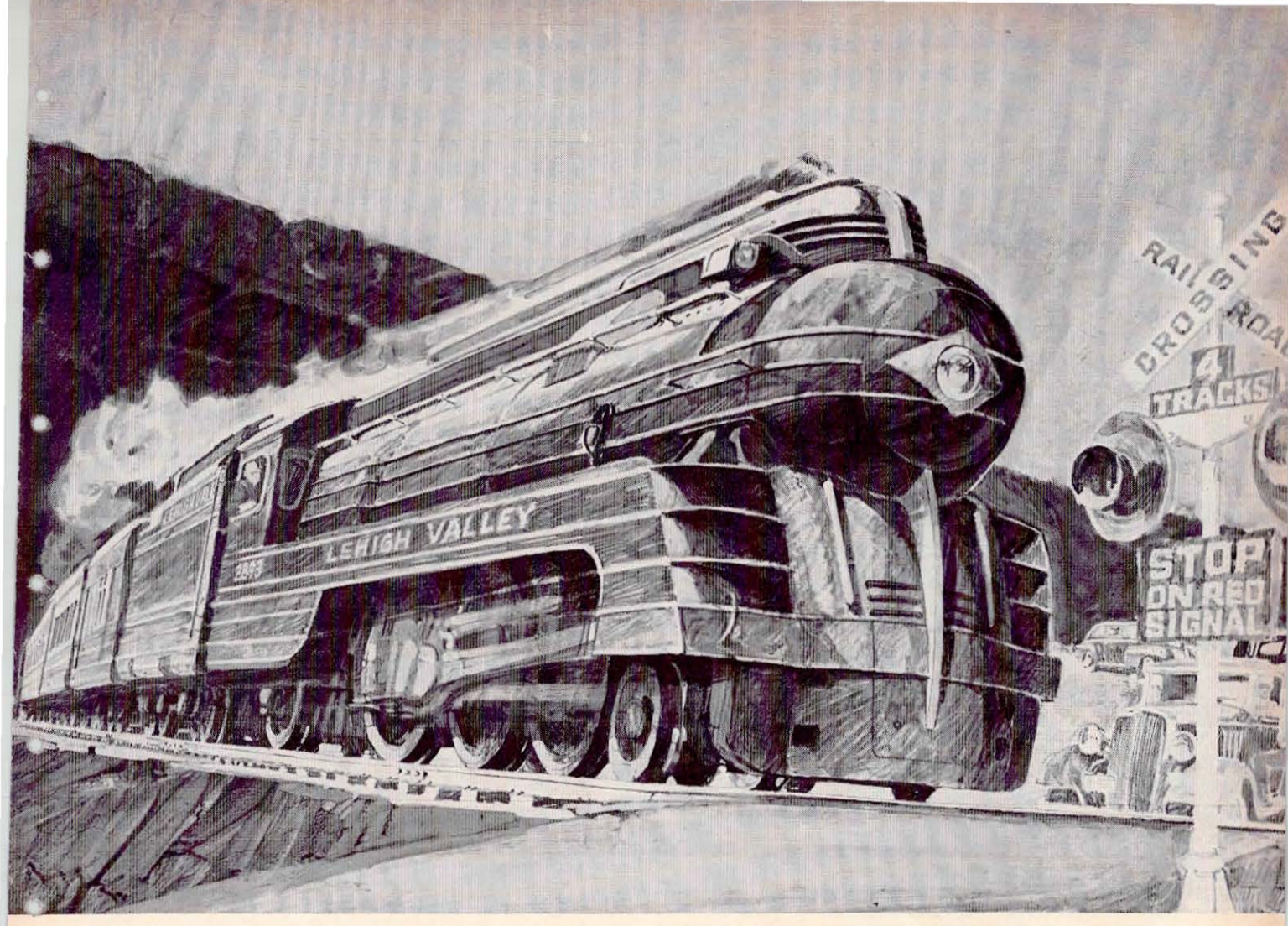
RAILWAY MAINTENANCE CORPORATION

Box 1888 • Pittsburgh, Pennsylvania 15230

Machines built in Pittsburgh, Canada, West Germany and Australia

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Circle 15 on reader service card



Remember her?

If you ever saw the Black Diamond wheeled by a streamlined K-5BS with 205 pounds of steam and 58,723 pounds of traction (10,000 from a booster) you never forgot.

That's her up above, as she looked about 1940. The Lehigh's plush parlor-car train hit speeds up to 80 mph between Buffalo and New York City. Many considered this historic train tops in daylight travel in the East.

Humble is helping the railroads write a new kind of history now — with petroleum products for high-power diesel-electric locomotives, heavily loaded unitrains, piggyback cars and fast, roller-bearing freight. But we've never forgotten the days of steam, because most of our people started then. In the shops.

And we've never forgotten how to give you the kind of service that only a railroad man knows how to give. Your Humble railroad man is a good man to know, whether you want to talk about trains of yesterday, today or tomorrow.

Humble Oil & Refining Company . . . The People Who "Put a Tiger in Your Tank®!"

ESSO

Free for framing. If you'd like a 22 x 14-inch reproduction of this original illustration commissioned by Humble in our "Historic Trains" series, mail the coupon to Humble Railroad Sales, Humble Building, Houston, Texas 77002.

Name_____

Company_____

Address_____

City_____ State_____ Zip_____

Some new developments in the world of railroad engineering

Suppliers are coming up with an impressive array of new products designed to help railroads improve their maintainence and operating techniques. Here, with illustrations and brief descriptions, are a few examples of some new products available to the industry.

This car mover doubles as a front-end loader

A railroad car mover which doubles as a front-end loader has now been made available. The unit primarily is intended for positioning railroad cars in plant-loading areas.

Designed to permit full utilization throughout the shift, the RMC Car Mover with Front-End Loader can be used for loading slag, gravel, snow or any bulk material when not busy moving cars. It is pointed out that it also can be furnished with other front-end attachments, such as pallet forks, dozer blades and snow plows. Any of these attachments, the manufacturer states, can be interchanged with the one-cubic-yard loader bucket in less than 10 min.

The RMC Car Mover operates from four rubber-tired wheels at railroad-track gauge and flanged guide wheels. Traction is provided by the rubber-tired wheels. When used as a railroad-car mover, the four-wheel-drive machine can handle as much as 420 tons, the manufacturer states. Available with gasoline or diesel engine, the unit has a 10-speed power-shift transmission. *Railway Maintenance Corp. (RA-1)*

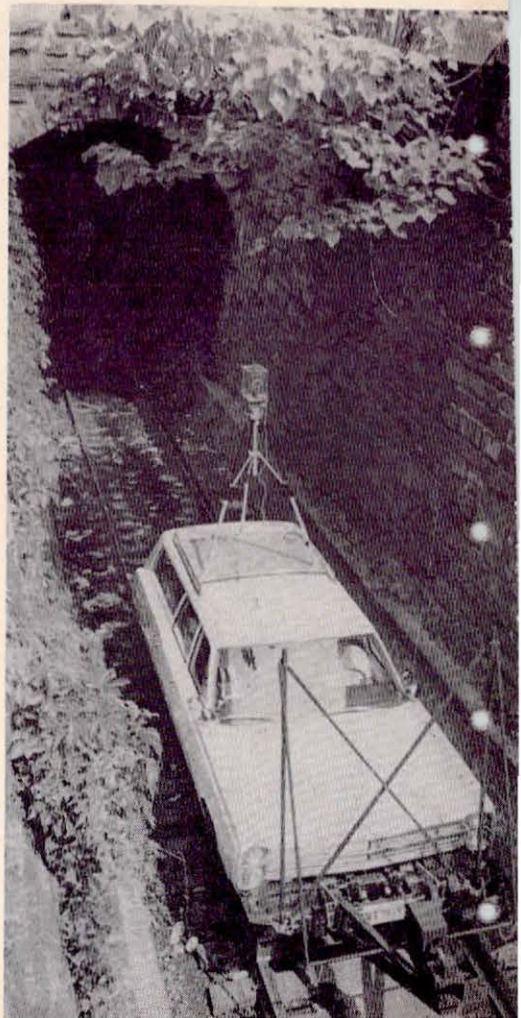
Automatic system records right of way obstructions

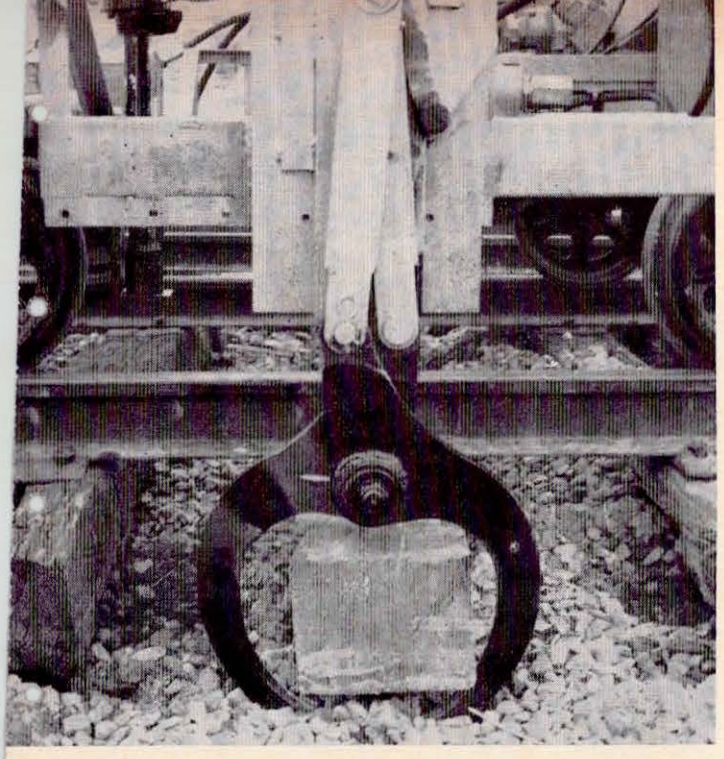
Exclusive world-wide rights to a photographic system, Scan, that automatically records obstructions along railroad rights of way have been granted to Chemetron Corporation's National Cylinder Gas division by the developer of the system, Scope, Inc.

Scan (structural clearance analyzer) is an optical device that measures and records minimum clearances. Mounted on a station wagon, adapted to run on the tracks, it uses an optical technique in which a thin sheet of light—23 feet high and 18 feet wide—is produced in a plane perpendicular to the track. A remotely operated camera records any obstruction that intersects this beam up to a height of 23 feet and 9 feet on either side of the track center line.

Components include a light source assembly, adjustable camera mount, remotely controlled camera and control box, four reference lights and a high-capacity film-strip projector and viewing case with over-sized projection screen.

The Scan system is offered as a service on a lease basis. *National Cylinder Gas Division, Chemetron Corp. (RA-2)*

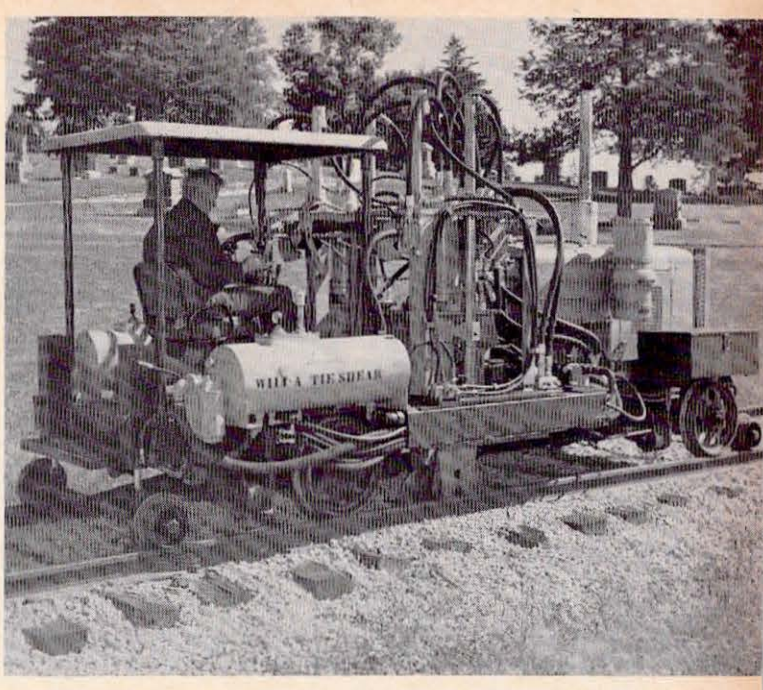




New device nips ties of all lengths and sizes

A tong-type tie nipper has been designed for use on the spike drivers made by Tamper, Inc. This feature is said to be very effective in switch areas and to be capable of nipping ties of all lengths and sizes.

The manufacturer points out that the combination of the high-frequency (3,000 vibrations per minute) 80-foot/lb operation of the spike hammer and the new fast-acting nipper greatly increases production speeds. *Tamper, Inc. (RA-3)*



Tie shear has hydraulically powered arms

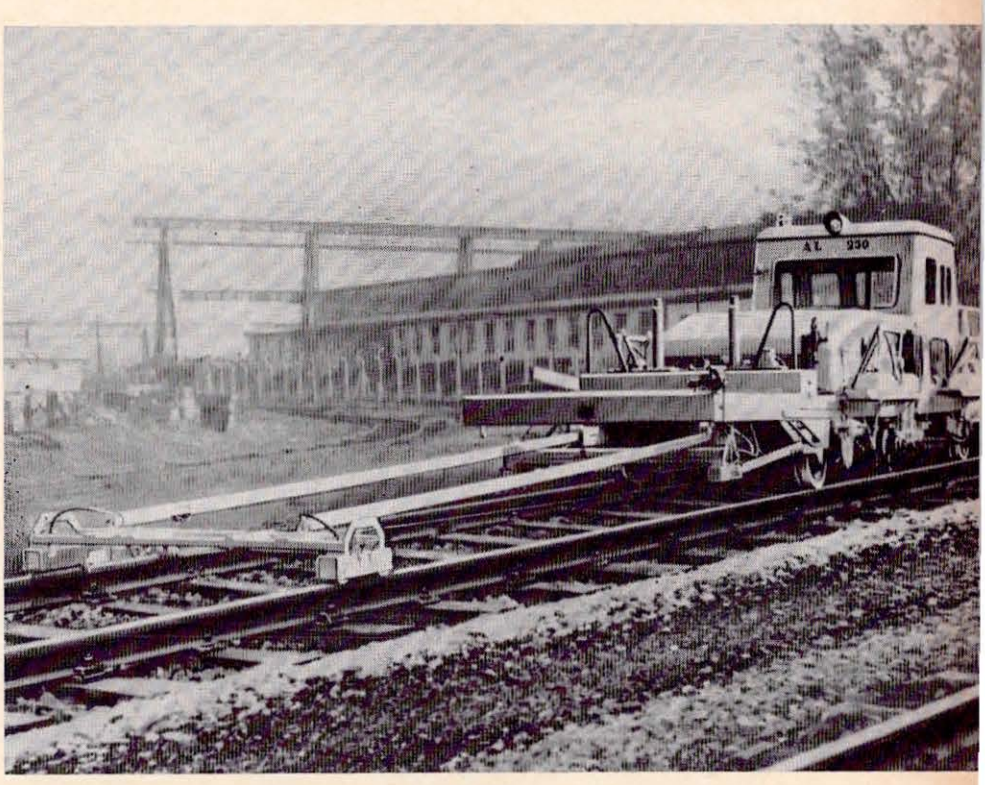
A new machine, designated the W114 Series A Hydraulic Tie Shear, has been developed for use by tie gangs. Two large shears, working simultaneously, cut the tie into three pieces and pick up the center piece. After the machine moves a short distance, hydraulically powered arms push the two end pieces out from under the rail, and the shears release the center section. The new Hydraulic Tie Shear is powered by a four-cylinder diesel engine. *Fairmont Railway Motors, Inc. (RA-4)*

Automatic track liner works fast and economically

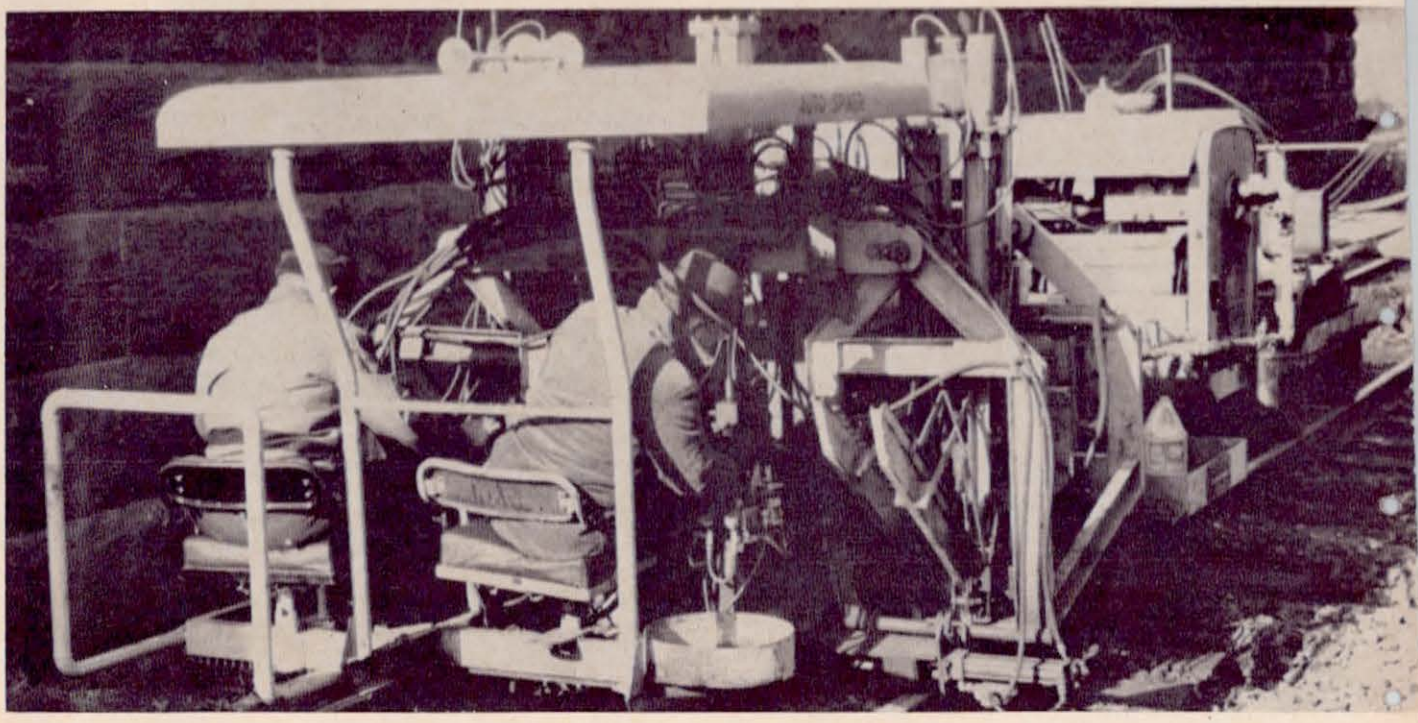
Employing the two-chord measuring system for lining track is a new unit designated the Plasser AL 250 Track-Lining Machine. This unit is said to be fully automatic in operation, making the lining results independent of the operator. The automatic control of the lining devices takes electrical impulses from the unit's chord-measuring device, which are proportional to the respective errors in the track. Correction movements of the lining cylinders and the lining tools are controlled by a servo valve.

The manufacturer points out that the employment of roller-lining tools makes it possible to line continuously during the operation. This is done by means of two double-flanged rollers on each rail. Because these rollers are swivel-mounted, a four-point application is assured without affecting track gauge. The AL 250 is said to line both tangent and curved track at the rate of 5,000 feet per hour.

This speed is said to result in economy of operation without in any way impairing the quality of the lining. *Plasser American (RA-5)*

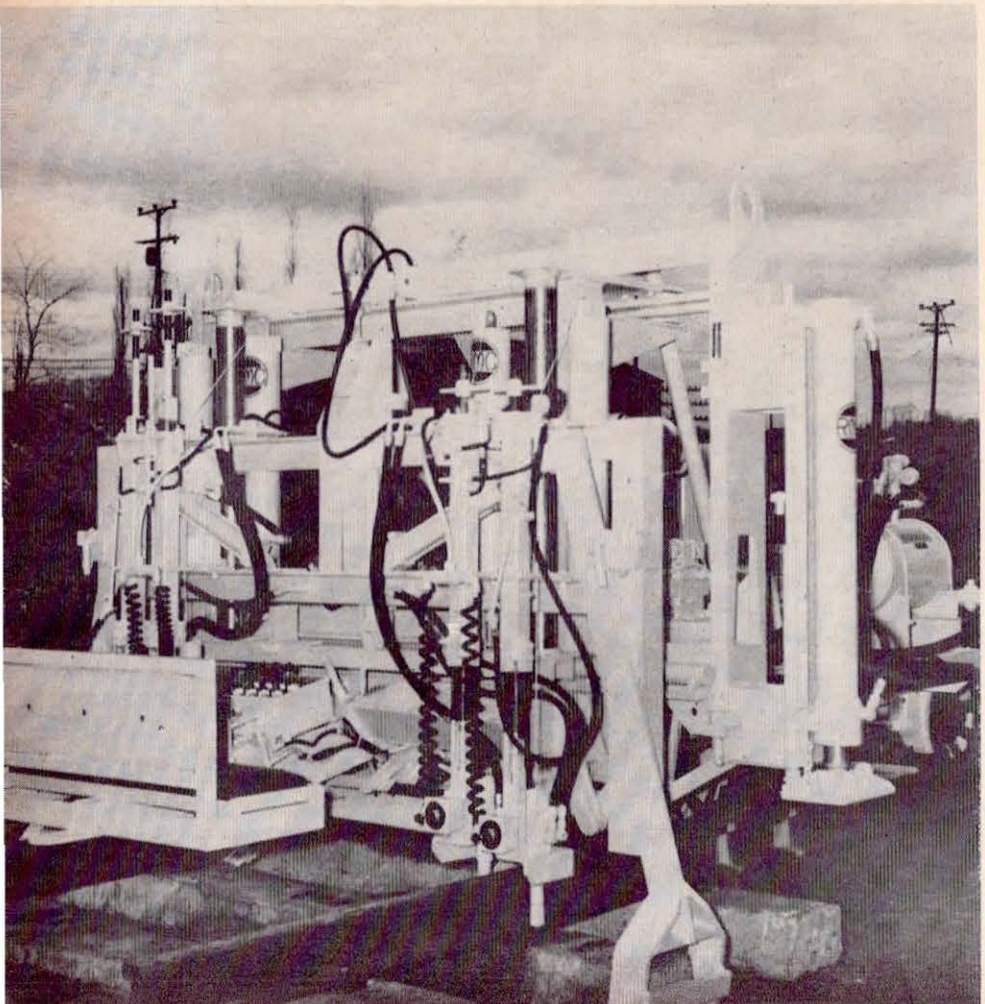


NEW PRODUCTS



Double-control station increases productivity of automatic spiker

The RMC Auto-Spiker has now been made available with either single or double-control stations. The double-control-station unit permits the spiking of both rails simultaneously with two operators, or allows one operator to place and drive spikes from a center position. The double-station unit is said to increase the machine's productivity by 20% to 30%. The double-station attachments are available for existing Auto-Spikers. *Railway Maintenance Corp. (RA-6)*



Concrete tie clip applicator does up to 100 ties an hour

A new machine for concrete tie installation and spacing has been introduced. It is said to apply any conventional clip going on the MR-2 concrete crosstie.

Designated the RMC Concrete Tie Clip Applicator, this machine performs the following functions: Grasps tie ends and lifts tie to base of rail; moves rails to proper gauge; moves tie laterally or longitudinally with rail to align insert anchors and properly space tie; and tightens four bolts simultaneously.

Air-jet nozzles are used to clean off the tie prior to application of the tie pad, to remove protective caps from insert anchors and to clean off the pad areas. Jacks and rail clamps are available for raising rails to permit placing tie pads when desired.

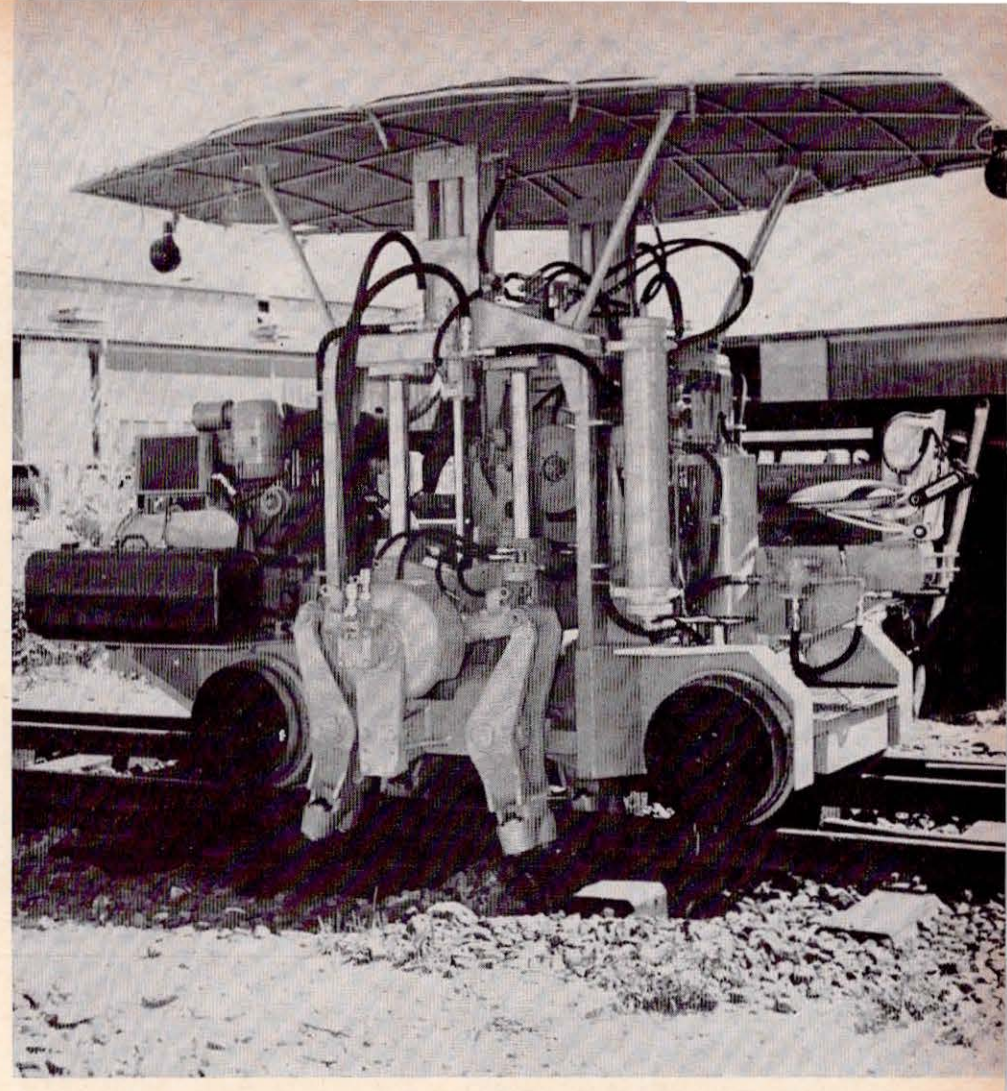
The manufacturer states that an operator and one helper with this machine accomplishes the work outlined above at a rate ranging from 60 to 100 ties per hour. The machine travels to and from work sites by rail at approximately 20 mph. *Railway Maintenance Corp. (RA-7)*

New ballast-tamping machine is designed for economy

A light, self-propelled ballast-tamping machine, designated the Plassermatic 06-16 Beaver, is now available. It is a unit that is designed to offer an economical means for doing spot tamping and all-around work.

The tamping units are said to be the same large 16 tamping tools as those on the production units of the 06 series with non-synchronous pressure-vibration tamping. The tamping pressure can be adjusted according to the ballast type, and the opening width of the tamping tools can be enlarged to make it possible to tamp even two ties without difficulty, it is said.

The Beaver is equipped with a lifting-and-leveling device. Roller lifting clamps grip the track from beneath the rail head. The manufacturer states that its production ranges from 650 feet to 800 feet per hr, which makes it suitable for working in conjunction with ballast-cleaning machines, when new tracks are being laid and for maintenance work requiring high lifts. The Beaver also can be equipped with switch-tamper heads. *Plasser American Corp. (RA-8)*

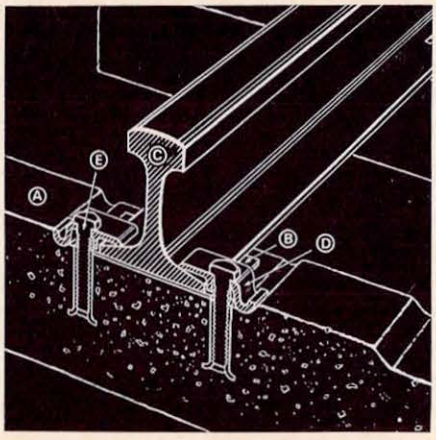


High-strength steel has many construction applications

A minimum yield strength of 100,000 psi with improved notch toughness is claimed for a new grade of roller quenched and tempered alloy steel plate called RQ-100B. It is designed for pressure vessels and construction applications, including buildings and bridges, where high strength, toughness and abrasion resistance are requisites.

As manufactured, RQ-100B travels continuously from heating furnace through the quenching unit on a special pinch-roller line which maintains flatness in the plate. A water quench, uniform top and bottom across the width of the plate, is located between two successive sets of pinch rolls. The rapid, high-volume, high-pressure quench is said to result in a depth of hardening greater than that achieved on more conventional quench and temper units.

By designing to take advantage of the 100,000-psi yield strength, the manufacturer points out, it is possible to produce lighter structures than with conventional structural steel but with equal load-carrying capacity. *Bethlehem Steel Corp. (RA-9)*



Rail tie clip is said to be simple to install and maintain

A new concept in concrete rail-anchor design is claimed for a rail tie clip designated Cliploc. The manufacturer states Cliploc is simple to install and maintain, holds positive gauge and that an installation as depicted, pretested to withstand a longitudinal force in excess of 2,000 lb and a pressure of 100,000 lb bolt tension on the rail base, requires only (A) the tie, (B) a polyethylene and (E) two bolts. *True Temper Corp. (RA-10)*

On/off track brush cutter can operate at 30 mph on rails

A new on/off-track brush cutter unit, called "Kal-Trac," has cutters 7 feet in diameter that, when their supporting arms are extended, reach out over 25 feet from the center line of track. Its carrier features a diesel engine, torque converter, full-reversing transmission and four-wheel positive traction drive. It is said to be capable of speeds up to 30 mph in either direction on the rails and up to 46 mph on the highway. *Kalamazoo Manufacturing Co. (RA-11)*

NEW PRODUCTS

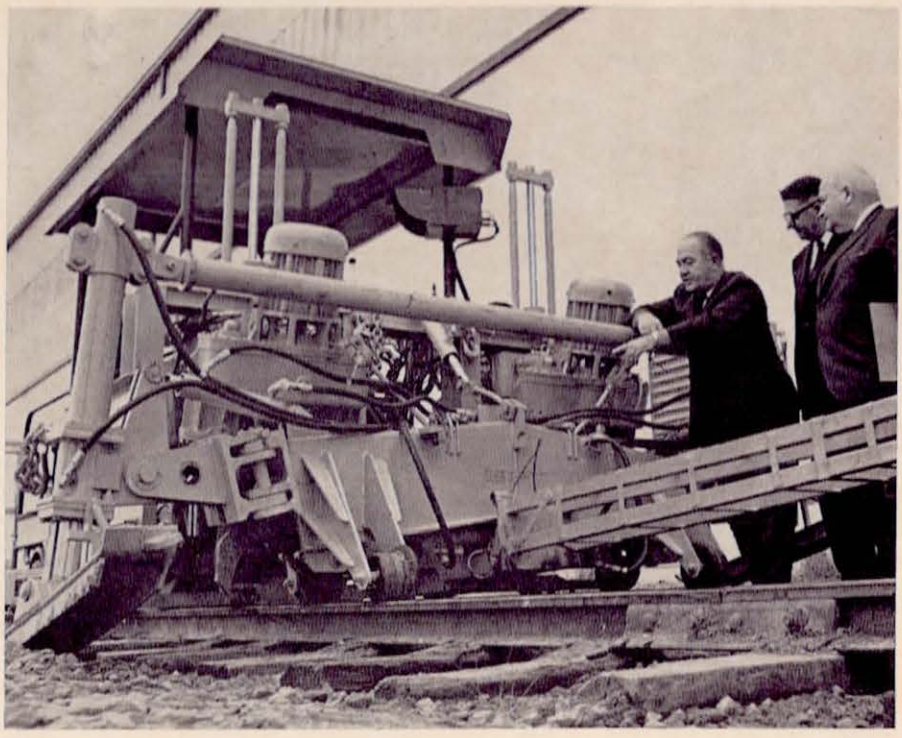
Blue-flag protection device works in less than 9 seconds

Designed for tracks where men are working, such as rip tracks, TOFC loading areas and inspection zones, is a motorized device that furnishes blue-flag protection, through remote control, with positive readback to the operator's station. Designated the Power Blue Flag (PBF), this unit is said to raise the flag in 8 sec and lower it under positive control in 7 sec. The PBF is designed for 115-volt alternating current, drawing 1.3 amp at full load. Activation is relay-energized and automatically stopped by limit switches in the up or down positions.

The flag may be either of enamel steel or of reflectorized aluminum. An ordinary 115-volt light bulb in a blue break-resistant lamp housing at the top of the staff burns only when the flag is upright. A mercury switch in the lamp base "reads" the flag position back to the operator's station.

A thermal overload protector re-sets in 10 sec if the motion of the flag is interrupted.

The base enclosure is 16-3/4 inch by 10 inch by 10 inch and is of 3/8-inch steel construction. *Hayes Track Appliance Co. (RA-12)*



TV indicator system permits one-machine surfacing and lining

Optional equipment has been developed for application to the Junior and the Switch Electromatic tampers for increasing their versatility. This is a closed-circuit television indicator system that permits surfacing and lining to be carried out by one machine.

The system has a heavy-duty TV camera located directly over the tie to be tamped and mounted on a separate frame that is independent of the tamper and travels beneath it along the rails on guides and rollers. This frame serves as mechanical linkage for revealing the horizontal and vertical deviations of the track as developed by front and rear buggies under the three-point measuring system. The scanning camera has crosshairs on the video tube and is aimed at a horizontal graduated scale for lining and separate graduated grade-rail and cross-level scales for surfacing. This information is revealed to the machine operator on a TV receiver that is mounted on the tamper frame adjacent to him. From the errors indicated, the operator can make the necessary corrections. *Tamper Inc. (RA-13)*

RAILWAY AGE
THE TRANSPORTATION WEEKLY

30 Church Street, N.Y., N.Y. 10007 READERS' SERVICE (Att. George Johnson)

PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS IN ADVERTISEMENTS NUMBERED: 1 2 3 4 5 6 7 8 9 10 11 12 13
14 15 16 17 18 19 20 21 22 23 24 25 26
27 28 29 30 31 32 33 34 35 36 37 38 39

PLEASE SEND INFORMATION ABOUT NEW PRODUCTS MARKED: RA-1 RA-2
RA-3 RA-4 RA-5 RA-6 RA-7 RA-8 RA-9 RA-10 RA-11 RA-12 RA-13

NAME ..... TITLE.....
COMPANY .....
ADDRESS .....
CITY ..... STATE..... ZIP.....
● Inquiries can be processed only if title and company are shown. 3/18/68

VAPOR PACE SETTER

Do customer complaints start in your hump yards?

If you think you're doing a good job in your hump yards now, see how much better it can be done.

Trains are made up faster, your customers' goods get delivered quicker when you add Pace Setter* to the Vapor Speed–Log® Control System. This gives you hump speed control with a tenth of a mile per hour accuracy.

The engineer simply dials the speed required, cars move over the hump with the set speed maintained automatically. Order replaces confusion. Pace Setter maintains constant speed, even as the tonnage decreases and your string of cars gets shorter.

Let Pace Setter save time and money for you in other operations too—unit train loading and unloading, weighing in motion, oiling, washing or weed spraying—wherever Pace Setter positive, accurate, constant speed control is required.

To learn more about Pace Setter write for our new brochure—better still, ask to see our 16 minute color film. You get the bulletin either way. Your Vapor salesman will make all the arrangements for you.

*TRADEMARK OF VAPOR CORPORATION

VAPOR®

RAILROAD AND TRANSIT DIVISION
VAPOR CORPORATION
6420 WEST HOWARD STREET, CHICAGO, ILLINOIS 60648
A Subsidiary of GP General Precision Equipment Corp.

MEMBER RPI

Circle 18 on reader service coupon

Robert B. Grayson
B&O

John M. Butler
C&NW

Thomas J. Siegel
EJ&E

James K. Edwards
SP

PEOPLE IN THE NEWS

ASSOCIATION OF AMERICAN RAILROADS.—Francis O. McDermott appointed tax counsel, Washington. Mr. McDermott has been a member of the professional staff of the U.S. Senate Committee on Finance since 1965.

BALTIMORE & OHIO.—Robert B. Grayson, assistant director of sales, Baltimore, promoted to director of sales, coal traffic department there (RA, Feb. 26, p. 46).

BURLINGTON.—Stephen F. Krantz, Jr., secretary to the general manager of freight sales, named traffic analyst, Chicago.

Roy L. Lassiter, sales manager, Amarillo, Tex., named district sales manager, Houston. Mr. Lassiter's successor is **Alfred M. Woolf,** sales manager, San Antonio, who in turn is succeeded by **Earl E. Little,** sales representative, Dallas. **Ross H. Dinkins** replaces Mr. Little. **Richard E. Altgilbers,** senior assistant general freight agent, Fort Worth, named assistant regional sales manager there, to succeed **G. C. Victory,** retired. **Gerald W. Brown,** junior assistant general freight agent, Fort Worth, replaces Mr. Altgilbers, and in turn is replaced by **Walter H. Henderson, Jr.**

CANADIAN NATIONAL.— J. W. Cropper, design engineer, Montreal, appointed assistant signal engineer, Great Lakes Region, Toronto, succeeding **T. R. Sprackett,** resigned.

W. T. Kelley, assistant manager, public relations, Edmonton, Alta., transferred to the great Lakes Region at Toronto, to succeed **H. R. W. Morrison,** resigned. **J. Norman Lowe,** information officer in the regional public relations office, promoted to public relations representative, Rideau Area, Montreal.

K. W. Landers, personnel officer, Montreal, has assumed the duties of the late **G. M. Harding,** superintendent of training (mechanical) and the latter position abolished. **J. A. Morris,** salary analyst, Montreal, appointed personnel assistant, Great Lakes Region, Toronto, succeeding **M. A. Matheson.**

Harry E. C. Kidd, manager, passenger service center, New York, appointed passenger service manager, Eastern United States, succeeding **F. K. Moore,** retired after 42 years with the CN.

E. H. Gilliatt, transportation planner, appointed co-ordinator—transportation systems development, Montreal. **E. M. Hallonquist,** transportation planning officer—system, appointed system transportation planning officer, Montreal.

William G. Buchanan appointed general manager of CN's London-based European organization. Mr. Buchanan has been attached to the president's office at Montreal for the past year.

CANADIAN PACIFIC.—R. T. Riley appointed assistant general manager, Pacific Region, Vancouver, B.C. He was formerly manager at Calgary, Alta.

CHESAPEAKE & OHIO.—David L. Czoka appointed sales representative, Grand Rapids, Mich., succeeding **R. L. Herbster,** resigned.

CHICAGO & NORTH WESTERN.—John M. Butler elected to the newly created position of vice president-accounting. He was formerly corporate controller, **Dictaphone Corp.**

CLINCHFIELD.—C. R. Harry, traffic manager, Erwin, Tenn., retired Feb. 10, after over 41 years with this road.

DENVER & RIO GRANDE WESTERN.—P. L. Wise named market analyst, Denver.

R. L. Detwiler, district freight and passenger agent, Denver, transferred to Chicago, to succeed **R. K. Hansen,** resigned. **A. R. Fjeldstedt,** district freight and passenger agent, Salt Lake City, replaces Mr. Detwiler, and in turn is replaced by **B. C. Josephson.**

ELGIN, JOLIET & EASTERN.—Thomas J. Siegel appointed manager-marketing services. He was formerly manager of pricing, **Duluth, Missabe & Iron Range.**

GREAT NORTHERN.—Joseph E. Burns, sales manager, Duluth, named area sales manager there.

INTERSTATE COMMERCE COMMISSION.—James T. Corcoran, Congressional liaison officer for the ICC, resigned March 1 to become director of legislative affairs, National Association of Motor Bus Owners.

MILITARY TRAFFIC MANAGEMENT & TERMINAL SERVICE.—Lieut. William Ward Stone, USN, named commercial carrier liaison, Eastern Area, Brooklyn, N.Y., succeeding **Lieut. Commander Donald W. Houghton.**

NORFOLK & WESTERN.—W. O. Tracy, Jr., superintendent, Pocahontas Division, Bluefield, W. Va., appointed assistant general manager, Pocahontas Region. **Joseph R. Neikirk,** assistant general manager, Lake Region, Cleveland, transferred to the Western Region, St. Louis, Mo., succeeding **Vernon E. Coe,** named president and general manager, **Kansas City Terminal,** Kansas City, Mo. **C. W. Cookes,** superintendent, Norfolk division, Crewe, Va., succeeds Mr. Tracy. **C. E. Lewey,** superintendent, Pittsburgh division, Brewster, Ohio, promoted to assistant general manager, Lake Region, Cleveland, succeeding Mr. Neikirk. **Thomas J. Golian,** assistant superintendent, Decatur, Ill., promoted to superintendent, Fort Wayne Division, Fort Wayne, Ind., succeeding **Edward F. Murry,** who replaces Mr. Cookes. **John T. Ormond,** superintendent, Decatur Division, transferred to the Radford Division, Roanoke, succeeding **William E. Ruby,** transferred to the Pittsburgh Division. **M. W. Hollenbeck,** assistant manager labor relations, Western Region, named superintend-

1000 CHUCKLES
FOR RAILROAD BUFFS

—in C. D. Poage's famous old cartoon *"At the Old Depot."* A frantic day in the life of the 19th century station agent (partial detail above). See a funny new detail every time you look at it. 12½" x 18½", ready to frame. For den, clubroom, hobby shop.

Only $3.00 postpaid (no C.O.D.'s) from C. R. Marquis Co., P. O. Box 6814, St. Louis, Mo. 63144

Circle 38 on reader service coupon

DIFFERENTIAL AIR DUMP CARS

CARRY MORE - WEIGH LESS!

MAINTENANCE OF WAY . . . ideal for ditching, rip-rapping, widening banks, and power shovel work.

REVENUE SERVICE . . . fast economical bulk handling for unit train or fast turn-around applications.

8-second dumping — all-welded construction — sizes to 70 cu. yds.

Write for bulletin D-59

DIFCO, Inc. Box 238, Findlay, Ohio 45840, U.S.A. Ph. (419) 422-0525

Circle 34 on reader service coupon

ent, Decatur Division. **Charles A. Glass,** assistant superintendent, St. Louis Terminal, promoted to assistant superintendent, Decatur Division, Decatur, Ill., succeeding Mr. Golian. **Ned S. Calvin,** assistant trainmaster, Moberly Division, Moberly, Mo., promoted to trainmaster there, succeeding **Homer C. Scott,** who replaces Mr. Glass.

D. H. Bergmann appointed superintendent TOFC operations, St. Louis. **Ted Kielborn** named supervisor TOFC customer service, Chicago. **W. E. Harkness** appointed TOFC terminal supervisor, Detroit, Mich.

B. B. Clayton promoted to division sales manager, Bristol, Va.

NORFOLK SOUTHERN.—Dan Starker promoted to regional sales manager, New York, succeeding the late **Malcolm N. Vienne.**

NORTHERN PACIFIC.—George W. Thompson, superintendent, Idaho division, Spokane, has been named to the newly created position of director-operating data systems, St. Paul. Mr. Thompson's successor is **J. G. Heimsjo,** transferred from the St. Paul division, who in turn is replaced by **R. O. Hammerstrom,** assistant to the general manager, St. Paul. **M. E. Hagen,** assistant superintendent, St. Paul, replaces Mr. Hammerstrom. Mr. Hagan is succeeded by **R. D. Schlappy,** trainmaster, St. Paul. **Donald G. Bromstrom,** general statistician, named assistant manager-cost and economic research, St. Paul. **James S. Craig,** cost analyst, becomes senior cost analyst, St. Paul.

PENN CENTRAL.—John G. Patten, vice president—freight sales, announced the following appointments (former positions in parentheses): **Henry G. Allyn, Jr.,** assistant vice president—freight sales, New York, with supervision over New England through the Boston office and in western New York through the Buffalo (assistant vice president—sales, PRR, New York); **Ralph N. Cramer,** assistant vice president—freight sales. Chicago, supervising the west through offices in Milwaukee, Minneapolis, Omaha, Denver and Davenport (same position, NYC); **George A. Shaffer,** assistant vice president— freight sales, Philadelphia, with supervision in the southeastern states through office at Atlanta (PRR regional sales manager, Philadelphia); **John J. Dan,** assistant vice president—freight sales, Cleveland (same position, NYC); **George M. Casady,** assistant vice president—freight sales, Detroit (same position, NYC); **Harry H. Ramsay,** assistant vice president—freight sales, Pittsburgh (PRR regional sales manager, Pittsburgh); **John E. Norwood,** assistant vice president—freight sales, Cincinnati (same position, NYC); **Joe E. Little,** assistant vice president—freight sales, St. Louis, with responsibility for southwestern states; (PRR regional sales manager, Chicago); **Joseph A. Armento,** sales manager—Pacific states, San Francisco (same position, PRR); **Roger G. Meldahl,** assistant vice president—freight sales—staff, New York (assistant vice president—freight sales and services, NYC, St. Louis); **Don L. Werby,** director, TrucTrain sales—system (director of Flexi-Van sales and services, NYC).

John H. Burdakin, assistant general manager, Central Region, Pittsburgh, promoted to general manager, Lake Region, Cleveland, succeeding **Edward L. Claypole,** named assistant vice president—passenger service (RA, Feb. 12, p. 33).

Harold S. Jensen, director of real estate, Philadelphia, with responsibility for special projects, appointed assistant vice president—real estate.

W. J. Grabske appointed shop manager, Harmon diesel-electric shop, Harmon, N.Y. **R L. Kohl** named superintendent maintenance—diesel locomotives, Harmon diesel-electric shop.

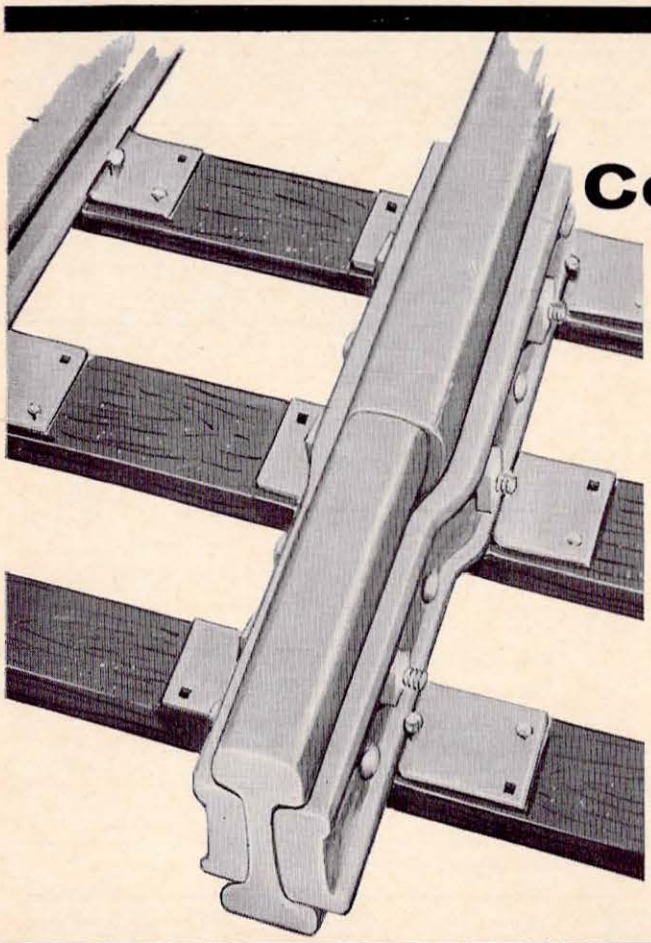
READING.—Karl D. Matthews, public relations manager, named to the newly created post of director of community affairs, Philadelphia.

REA EXPRESS.—Charles L. Murphy has been appointed vice president and general manager, Pacific Region, San Francisco. He has been acting regional vice president and general manager since Oct. 1967.

ROCK ISLAND.—Gary W. Widell, transportation engineer, Chicago, named manager-customer equipment services. **David L. Waite,** manager of special equipment, appointed manager-special services.

SANTA FE.—A. L. Scott, assistant to general manager, retired Mar. 16 after more than 48 years' service. The duties assigned to Mr. Scott have been assumed by **W. S. Kennedy,** assistant to general manager. **J. A. Whitaker** named personnel assistant.

SEABOARD COAST LINE.—William H. Young, Jr., Columbus, Ga., appointed district counsel, with jurisdiction over Chattahoochee, Muscogee, Stewart and Webster Counties. The law firm of Caldwell, Pacetti, Barrow & Salisbury, Palm Beach, Fla., appointed district counsel, with jurisdiction over



CLEVELAND
Compromise Joints

- The best joint for joining different size rails
- Guards against wear of rails and joints
- Forged for greater strength
- Heat treated to your specifications
- Furnished for 4 or 6 hole applications
- Low cost, secure protection

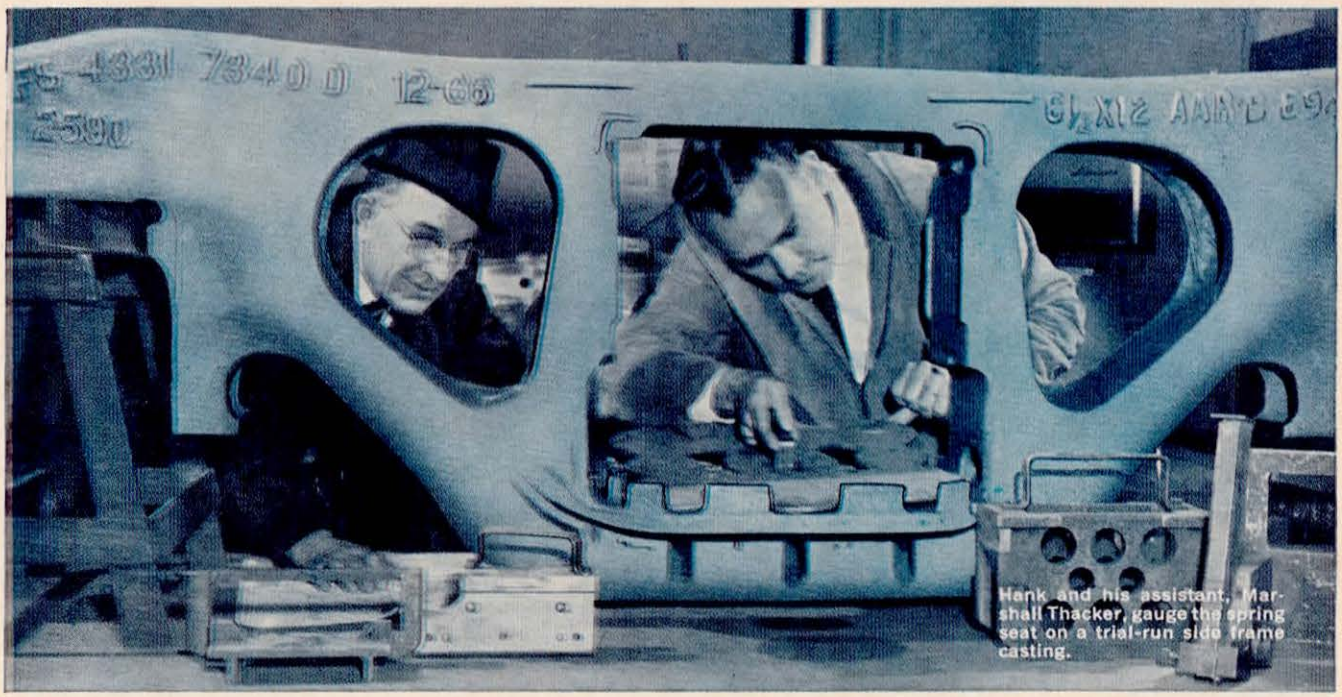
CLEVELAND FROG AND CROSSING CO.
Subsidiary of Pettibone Mulliken Corporation
6917 Bessemer Ave., S. E. Cleveland, Ohio 44127

Circle 21 on reader service coupon

HERE'S HANK THILL...

A guy who looks for trouble...

EVEN IN A DREAMHOUSE!!



Hank and his assistant, Marshall Thacker, gauge the spring seat on a trial-run side frame casting.

Hank Thill is in charge of our quality control. He and his staff make literally thousands of critical inspection tests each week to insure that exacting specifications are met on our steel freight car truck castings. Hank's just trying to find trouble. When he does, it's back to the drawing board or pattern shop.

"Hank's Dreamhouse" is what some are calling the roomful of fancy precision measuring devices he and his men have assembled. But Hank doesn't mind the kidding. He's proud of his many years of contribution to the never-ending standard of excellence which each Scullin side frame and bolster must measure up to before final "OK' is given for production runs. We're not daydreaming in railroading's dynamic new age . . . *even if we do have a dreamhouse.*

SCULLIN STEEL CO.
A Division of Universal Marion Corporation
St. Louis, Missouri 63139—6700 Manchester Avenue

SALES OFFICES:
Chicago, Illinois 60604—332 S. Michigan Ave.
Philadelphia, Pa.—1281 Suburban Sta. Bldg. 19103

REPRESENTATIVES:
Baltimore, Maryland 21202—N. S. Kenney Co.—1815 Munsey Bldg.
Richmond, Virginia 23230—Samuel P. Goodloe—3600 W. Broad St.
San Francisco, Calif. 94124—J. C. Fennelly Co.—1485 Bayshore Blvd.

RPI
RAILWAY PROGRESS INSTITUTE

SCULLIN STEEL

Circle 22 on reader service coupon

Martin, Okeechobee, and Highlands Counties.

P. E. Balco appointed district sales manager, Pittsburgh.

SOUTHERN.—Joseph A. Kirkman appointed assistant director, Rail-Highway Services, Atlanta, Ga. **David A. Dean** appointed manager, Motor Services, Rail-Highway Services, Atlanta, succeeding Mr. Kirkman, whose headquarters previously were at Washington.

Orville V. Otwell, assistant manager, promoted to manager, customer service, engineering, Washington, D.C.

John P. McKenna appointed commerce counsel, Washington. He has been associated with Covington & Burling since 1960.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT.—Don C. McMillan elected president, succeeding **A. J. Eyraud, Jr.,** president of Asbury Transportation Co. Mr. McMillan is a retired Pasadena city manager. **Herbert H. Krauch,** retired editor, Los Angeles Herald-Examiner, named vice president, succeeding **Kermit M. Bill,** mayor of Huntington Park.

SOUTHERN PACIFIC.—B. L. Morris, district freight and passenger agent, Beaumont, Tex., advanced to general freight and passenger agent, El Paso, to succeed **George E. Farosich,** promoted to assistant traffic manager, Central District, San Francisco. Mr. Morris' successor is **T. J. Reynolds,** district freight and passenger agent, Galveston, who in turn is replaced by **Lester Byron,** assistant to the general freight and passenger agent, Houston.

N. L. McCracken, assistant chief mechanical officer—maintenance, San Francisco, retired Jan. 31, after 48 years of service. He has been succeeded by **William O. Brown** (RA, Feb. 26, p. 46). **J. K. Edwards,** assistant superintendent, mechanical department, Sacramento, Calif., promoted to superintendent of that department, succeeding Mr. Brown. **J. W. McLaughlin,** assistant superintendent, mechanical department, Los Angeles, succeeds Mr. Edwards at Sacramento. **T. O. Siegmund,** master mechanic, Los Angeles division, succeeds Mr. McLaughlin. **Ray A. Moore,** mechanical production planner, Los Angeles, succeeds Mr. Siegmund and is replaced by **Roy A. Moore.**

A. E. Hill named assistant secretary, to succeed **T. F. Ryan,** who retired Feb. 29 after 39 years of service. **Dante Perazzo,** executive assistant, retires Mar. 31 after 50 years' service. **J. W. Massie** appointed assistant manager of personnel, Houston.

TERMINAL RAILROAD ASSN. OF ST. LOUIS.—K. A. Ludwig named purchasing agent, effective April 1, to succeed **H. T. Semple,** retiring.

UNION PACIFIC.—James R. Houston, assistant auditor, freight accounts, named director of special projects in the general auditor's office, Omaha.

Walter M. Phelps named assistant to traffic manager, Los Angeles. **William F. Brown,** general traffic agent, Hollywood, Calif., retired Jan. 31 after more than 41 years of service.

Richard L. Sutton, assistant engineer car maintenance, named assistant mechanical superintendent-car department.

The UP has appointed the following to complete the FLOCON organization: **Thomas B. Montgomery,** senior assistant director; **Alvin C. Peterson** and **C. Leo Kenyon,** assistant directors; **Edward J. Svacina** and **Floyd F. Balius,** assistant directors-special equipment.

Circle 23 on reader service coupon ▶

LOOK TO BRUCE

for proven, tested freight car flooring

Bruce Dura-Wood floors have been doubly-tested: (1) Leading Class I railroads have used them for years with never a failure. (2) Special engineering tests at a leading university have proven they can sustain lift truck wheel loads up to 82,500 lbs. Recent railroad computerization aims at more revenue-producing days per car, and maintenance-free Dura-Wood floors can help to reach this goal.

Available in lengths, thicknesses and machining as specified—with preservative treatment if desired. Also ideal for replacement floors, since Dura-Wood outwears ordinary flat-grain floors as much as 6-to-1. For complete data, write E. L. Bruce Co., Box 397, Memphis, Tenn. 38101.

Dura-Wood is laminated edge-grain oak, pre-cut to size, easy to install. It gives a smooth end-to-end surface and provides better cargo protection (no shrinking, no gapping, no breakthrough).

BRUCE® **DURA-WOOD**

FREIGHT CAR FLOORING

Product of world's largest maker of hardwood floors

MEMBER RPI

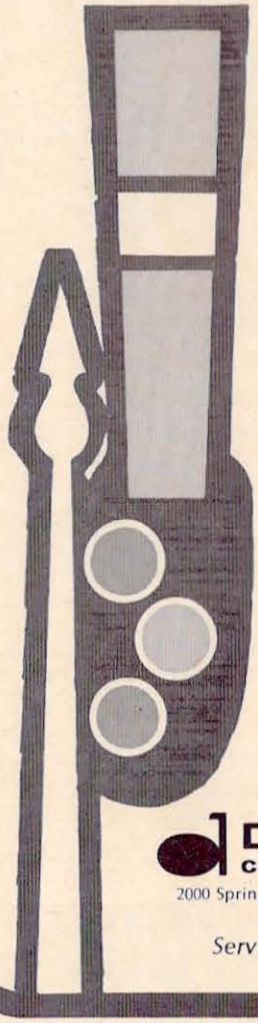
DAUBERT
CHEMICAL COMPANY

is pleased
to announce
the
appointment
of

ADRIAN A. WALKER
and
ROBERT H. WATTS

Railroad
Representatives

336 South Jefferson Street
Chicago, Illinois 60606
Telephone: 312 372-5504



Daubert corrosion and rust preventative and insulation materials for the protection of metal surfaces . . . rolling stock, bridges, tanks, etc.

- Anti-Condensation Coating
- Nailable Steel Floor Coating
- Railway Car Upgrader
- Nail Groove Sealer
- Protective Coating For Bridges
- Insulating Compounds
- Car Cement
- Nox-Rust Aluminum Coating

DAUBERT
CHEMICAL COMPANY
2000 Spring Road • Oak Brook, Illinois 60521
Telephone: 312/582-1000

Serving Industry Since 1935

Circle 24 on reader service coupon

Steel shippers sketch car needs

Desirable features of freight cars to meet steel industry shipping needs have just been spelled out for railroads and carbuilders. Acting through the American Iron and Steel Institute—their trade organization—steel producers have come up with suggestions for a box car, three styles of flat cars and four gondola configurations for moving finished and semi-finished products.

● **Seek serious consideration.** "If new or rebuilt cars are designed to include these features," says AISI, "we feel that our products can be safely loaded to meet present rate minima and provide our mutual customers the delivery they desire." Ferrous producers urge serious consideration for the suggestions "in an effort to standardize car equipment and provide a car fleet of sufficient size to transport products of the iron and steel industry."

With steel orders moving upward in recent weeks, spurred by prospects of a late-summer strike, railroads probably face an even more immediate quandary in car supply than that posed by the AISI suggestions. In the long run, however, AISI sees the need for more specialized equipment than the general-service box, flat and gondola cars which its members have traditionally used. While no attempt has been made to establish the quantities of each type of car described, features have been detailed specifically.

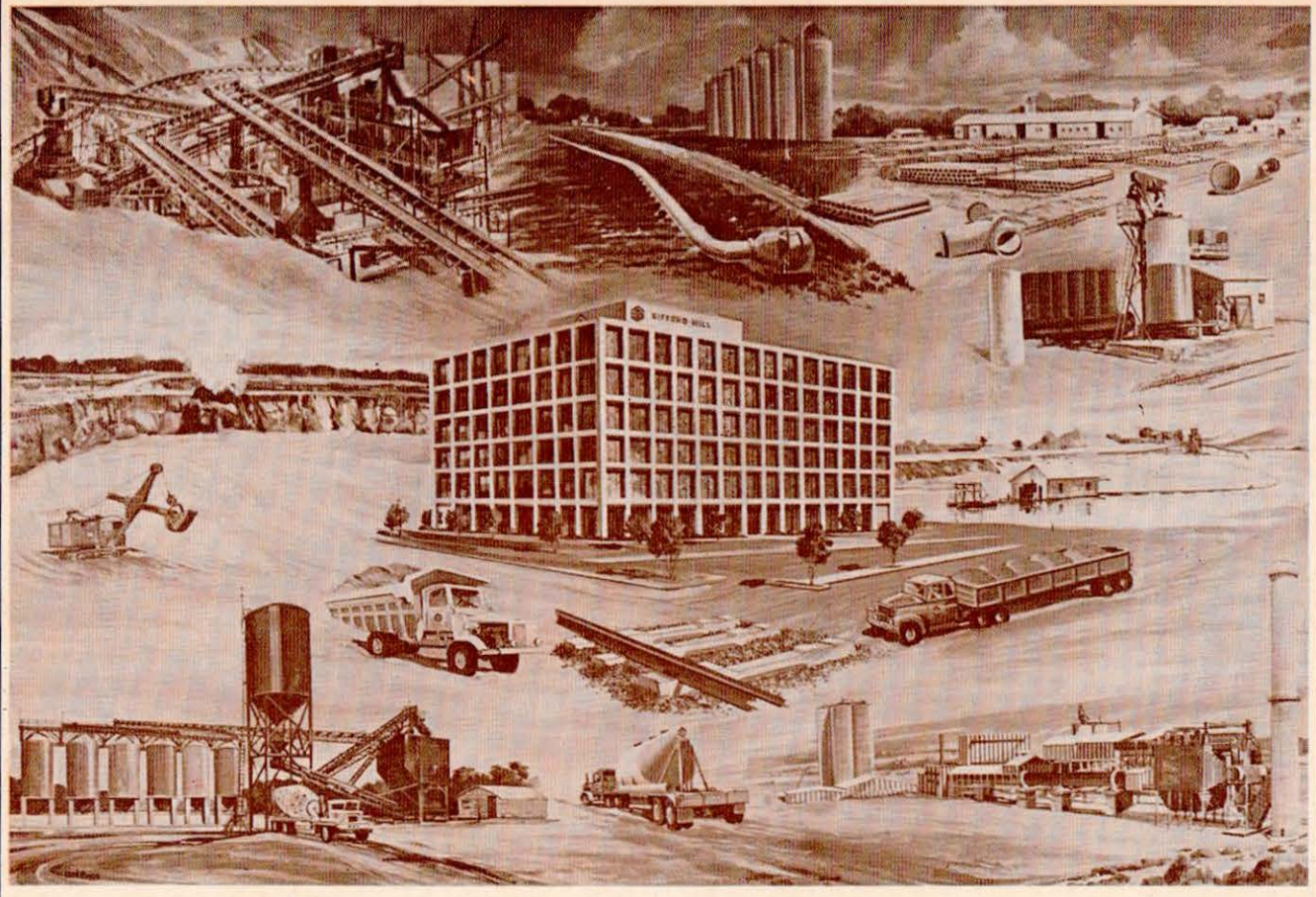
● **Railroads already moving.** Many of the AISI suggestions are already being incorporated in cars being built or purchased—primarily for their steel shippers—by railroads. For the majority of the proposed car types, high-capacity cushioning is requested—a feature already incorporated in many new steel-service gondolas. Similarly, the majority of cars desired by iron and steel producers would be of 100-ton capacity—a trend which is also already well developed throughout the country.

Across-the-board, AISI seeks car trucks with features that control vibration and oscillation. All equipment with roofs or covers should have a coating or insulation to protect against condensation. Floors should be of steel-backed wood or composite wood-and-steel construction capable of sustaining lift truck axle loads of up to 70,000 pounds.

● **Down to cases.** Getting down to cases, the AISI heavy-duty (100-ton) box cars would have a maximum inside length of 60 feet. Door openings—not staggered—should be a minimum of 16 feet wide and 9½ feet high. Plug, sliding or combination plug and sliding doors suit steel mills.

Three different styles of flat cars are needed, says AISI. Conventional flat cars—half 53½ feet and half 60 feet long—should be divided equally between 70-ton and 100-ton capacities. A quarter of these cars should have fold-down end bulkheads, which would produce a full-length deck when not in use. The extra-length flat cars sought would be 75 and 89 feet long with 70- and 100-ton capacities. Covered coil cars, classed as flats by the AAR, should be of 100-ton capacity with 48-foot troughs capable of handling coils with diameters up to 90 inches. Covers should be integral and operated by one man, if possible.

Three-piece lift-off covers would continue to be satisfactory on the 52½-ft covered gondola which suits steel shippers. The standard 52½-ft mill gondola of the future should be as wide as possible and always cushioned, says AISI. Also proposed are 52½- and 65-foot tubular products gondolas with 8-foot-high end bulkheads. Another series of long gondolas—65½- and 75-foot cars—should have conventional ends and maximum possible interior widths. ■



GIFFORD-HILL PRODUCES PROGRESS IN THESE NINE STATES

Louisiana • Arkansas • Kansas • Oklahoma • Colorado • New Mexico • Nebraska • Arizona • Texas

GIFFORD-HILL SERVES THE RAILROAD INDUSTRY WITH 10 QUALITY PRODUCTS

Ready-Mix Concrete • Portland Cement • Sand and Gravel • Crushed Stone (Ballast) • Concrete Pipe • Crushed Slag (Ballast) • Blasting Sand • Filter Materials • Prestressed Concrete Cross Ties • Locomotive Sand

GIFFORD·HILL®

THE GIFFORD-HILL COMPANIES

DALLAS, TEXAS

THE GIFFORD-HILL COMPANIES PROUDLY EXTEND *"a hand in progress"*

Circle 25 on reader service coupon

H. F. Goelzer
Marquardt

Glenn R. Griffith
Alco

John F. Whiteley
WABCO

Tom Reghanti
Fruehauf

Max Keenan
Fruehauf

Karl Long
International Car

SUPPLY TRADE

H. F. Goelzer has been elected vice president, **Marquardt Corp.**, Van Nuys, Calif. Mr. Goelzer serves as president of **Marquardt Industrial Products Co.**, subsidiary of Marquardt Corp.

Glenn R. Griffith, product service manager, Locomotive & Engine Products Division, **Alco Products,** Schenectady, N.Y., has been appointed locomotive development and product engineering manager of that division.

John F. Whiteley has been appointed to the newly established position of director of press relations, **Westinghouse Air Brake Co.,** Pittsburgh. Mr. Whiteley was previously manager of communications for WABCO's subsidiary, Melpar, Inc., Falls Church, Va.

Tom Reghanti has been appointed vice president—general sales manager, Fruehauf Division, **Fruehauf Corp.,** Detroit. **Max Keenan** has been named vice president—national accounts. Mr. Reghanti was formerly vice president—used trailers and service sales. Mr. Keenan was formerly vice president—general sales manager for the division.

Karl Long, executive vice president, **International Car Co.,** Buffalo, N.Y., has been elected president, succeeding **Bernard J. Yelin,** who is retiring but will continue to serve in a consultant capacity.

Robert C. Crosby has been named to the newly established position of executive vice president, **Matisa Equipment Corp.** Mr. Crosby was formerly president, **Royce Kershaw Co.,** Montgomery, Ala. **C. J. Derler** has been appointed service manager, also a new position. Mr. Derler was previously associated with **Jackson Vibrators, Inc.**

James J. Croft, district sales manager, Chicago, **Magnus Metal Corp.,** subsidiary of National Lead Co., has been named director of marketing, New York.

John H. Staiger, purchasing agent, Hammond, Ind., plant, **Pullman-Standard division of Pullman Incorporated,** has exchanged positions with **William J. Knaak,** purchasing agent, Michigan City, Ind., plant.

Robert M. Seely, assistant chief engineer, Castings Division, **General Steel Industries,** Granite City, Ill., promoted to chief engineer, succeeding **Michael J. Donovan,** who retired Jan. 1. **Keith L. Jackson,** manager of engineering design, succeeds Mr. Seely as assistant chief engineer.

W. E. Rowland, eastern regional manager, **Primary Battery Division, Thomas A. Edison Industries** of **McGraw-Edison Co.,** has been appointed assistant general sales manager,

"ASK THE ROADS THAT CARRY THE LOADS"

OVER

BOUTET Process
(IN-TRACK)
Rail Welding

Millions of Tons

Fast, Rugged Freight traffic

From Labrador to the Gulf . . .
From the Atlantic to the Pacific . . .
Extreme Temperatures
SAVE $800 PER MILE

DU-WEL

SPECIAL RAILROAD CASTINGS AND FORGINGS

DU-WEL STEEL PRODUCTS CO.

RAILWAY EXCHANGE BUILDING
TELEPHONE HARRISON 7-8257
Chicago 60604

Visit Booth 500 — REMSA Exhibit
March 18 - 21, 1968

Circle 26 on reader service coupon

THE RK CO. . . . COMBINES YEARS OF EXPERIENCE WITH TODAY'S MOST ADVANCED MAINTENANCE EQUIPMENT

SERVICES OFFERED:

- Track lowering—
  Clearances, tunnels, bridge ends, and out of face.
- Undercutting and Ballast Cleaning—
  Ballast recovery minimizing expenditure.
- Disposal of Wasted Material—
  Load directly to cars, eliminate costs.
- Yard Cleaning—
  Self contained through leads, turn outs and yard tracks
- Tie Renewals—
  High production, low costs. Tie replacements.
- Brush Cutting—
  Up to forty (40) feet width, high production.

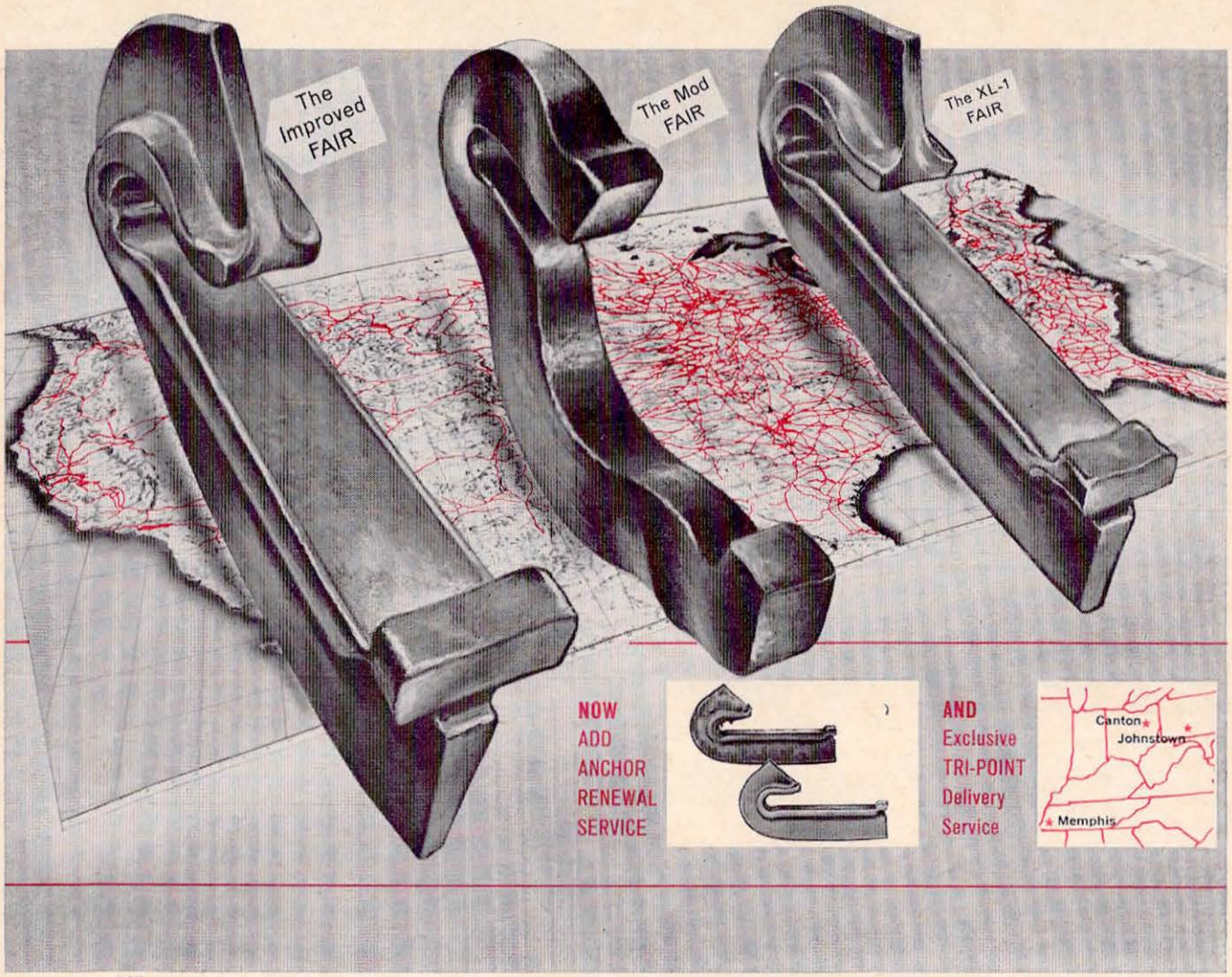
CONTACT:

ROYCE KERSHAW CO., INC.

TELEPHONE (205) 263-0223
P. O. BOX 2087 ■ MONTGOMERY, ALA. 36103

Circle 37 on reader service coupon

these are 3 of the billion "FAIR's" that are all over the map



R-231

It all adds up to Space Age Railroading's
Most Complete Rail Anchor Service

What does it take to be the *most complete?* To provide rail anchors that are engineered-to-the rail-task on both considerations of performance and price?

FIRST, it takes a *Complete Anchor Line* backed by FAIR'S No. 1 experience in manufacture . . . *a one billion anchor experience.*

SECOND, it takes a *Special Rail Anchor Renewal Service.* This is a NEW Service bonus for every user of FAIR rail anchors. This service enables you to have your "used Anchors" renewed as good as new . . . for re-installation on your tracks at substantial savings.

THIRD, it takes *Tri-Point Delivery Service* . . . plants at Memphis . . . Canton . . . Johnstown to insure the obvious advantages of faster deliveries . . . lower freight costs.

The Improved
The Mod
The XL-1

FAIR® RAIL ANCHORS

Circle 27 on reader service coupon

PRODUCT OF PROGRESS *by*
OOR & COMPANY
RAILWAY PRODUCTS DIVISION
80 East Jackson Blvd., Chicago, Ill. 60604

J. W. Bergen
U.S. Ry. Equip.

Robert M. Raymond
U.S. Ry. Equip.

James L. Duffy
U.S. Ry. Equip.

John England
U.S. Ry. Equip.

H. C. Woodman
Thrall

Alan G. Grey
CF&I

Bloomfield, N.J. **W. E. Huntenburg,** field engineer, has been named eastern district manager.

V. L. Baltzell, Mid-South division manager, **Oakite Products,** has been appointed Western Region sales manager, Dallas, Tex. **J. P. Melhado,** Pittsburgh division manager, has been appointed Central Region sales manager, Chicago. **S. L. Perkins,** South Atlantic division manager, has been appointed Eastern Region sales manager, Berkeley Heights, N.J.

J. W. Bergen, vice president and general manager, **Railway Car Division, Evans Products Co.,** has also been elected president, **United States Railway Equipment Co.,** an Evans subsidiary. **Robert M. Raymond** has been elected executive vice president; **James L. Duffy,** vice president of sales, and **John England,** vice president of technical services of **United States Railway Equipment Co.**

Howard C. Woodman has been named manager of engineering and production planning, **Thrall Car Manufacturing Co.** Mr. Woodman has been manager of design engineering, and in addition to those duties will be in charge of Thrall's production control and industrial engineering groups.

Alan G. Grey has been elected vice president—sales, **CF&I Steel Corp.,** Denver, succeeding **J. N. Counter,** a vice president, who becomes assistant to the president. Mr. Grey was formerly general manager of purchasing for Kaiser Steel.

Nickolas C. Eckerle has been appointed manager, Transportation Division, **Nalco Chemical Co.,** Chicago. He formerly was manager, process chemicals, Transportation Division.

William D. Messer has been appointed director of international marketing, **Huck Manufacturing Co.,** Detroit.

Frederick D. Hirn has been appointed sales representative, Philadelphia district, **Okonite Co. Richard E. Davis** has been named sales representative, Houston district.

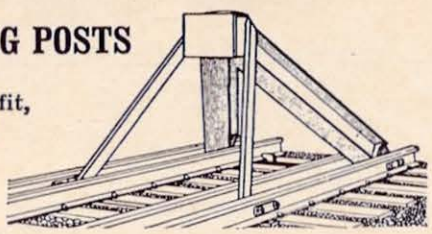
Howard C. Palmer has been appointed vice president of **Marquardt Industrial Products Co.** Mr. Palmer was formerly marketing manager for railway signals and controls. He will direct regional sales offices for those products in Chicago, Philadelphia, Pomona, and Jacksonville.

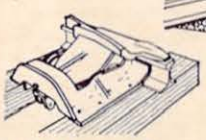
Phil Hofer has been appointed eastern manager, Railroad Machinery Division, **Pettibone Mulliken Corp.,** New York.

McNamara Supply Co. has been created as a division of **Journal Box Servicing Corp.** to act as a manufacturers' representative, with headquarters at Chicago.

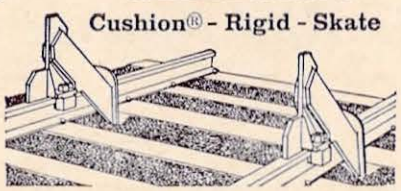
Hayes ...for quick shipment of approved

BUMPING POSTS
All-Steel,
Universal fit,
Six Types





WHEEL STOPS
Cushion® - Rigid - Skate



DERAILS
Sliding
Hinge
Portable

Free leatherette ring-binder catalog of world's most-specified derails, bumping posts and wheel stops (including periodic supplement sheets). Write on letterhead.

Specialists since 1903 in side track security

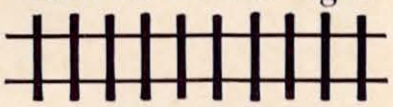
Hayes Track Appliance Co.

RICHMOND, INDIANA 47374

Circle 28 on reader service coupon

SPENO

You Are on the Right



To Lower
Maintenance Costs
When You Use

SPENO SERVICES

"BALLAST CLEANING"
"RAIL GRINDING"

"Just Ask the Railroads That have used us"

FRANK SPENO RAILROAD BALLAST CLEANING Company, Inc.
306 North Cayuga Street, Ithaca, New York
Clark Street, East Syracuse, New York

SPENO INTERNATIONAL, S.A.
22 Parc Chateau Banquet, Geneva, Switzerland
(For Operations Outside the North American Continent)

MEMBER RPI RAILWAY PROGRESS INSTITUTE

THE HOLDEN COMPANY, Limited
614 St. James Street, Montreal, P.Q., Canada
(Sales Representative for Canada)

Circle 29 on reader service coupon

WHAT MAKES WOODINGS RAIL FASTENERS *Stay* TIGHT?

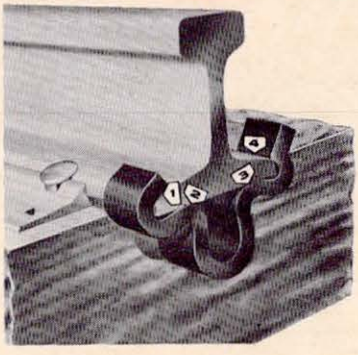
...it's the way they're made

We've been in this business a long time, and we've learned what it takes to keep rail fasteners tight. It's our special combination of product design, materials, forging and heat treating. For each group of products, our formula is different but the result is always the same—unexcelled tenacious holding power.

Here are three Woodings Railroad Fasteners that take a solid grip and hold on—Rail Anchors, Nut Locks, Triflex Springs.

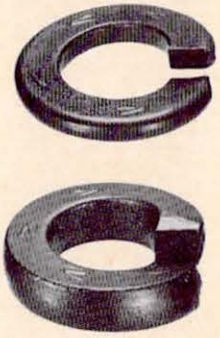
Unexcelled Holding Power

With its powerful spring pressure, its four-point contact grip, and its deep tie-bearing area, the Woodings Advanced-type Rail Anchor has unexcelled reserve strength. Tests by independent laboratories and railroads show that there is no rail anchor on the market that exceeds the Woodings Anchor's holding power. They are excellent for welded rail because of the unrelaxing grip that welded rail needs. They are readily applied by machine, or by hand.



Verona "Special" Alloy Nut Locks

Made in five sizes from 7/16" x 1/4" to 7/16" x 9/16"—Verona "Special" Alloy Nut Locks have the wide reactive range needed to keep track bolts tight. This reduces angle bar wear and rail batter, and eliminates periodic tightening of the bolts.



Equal Tension for All Track Bolts

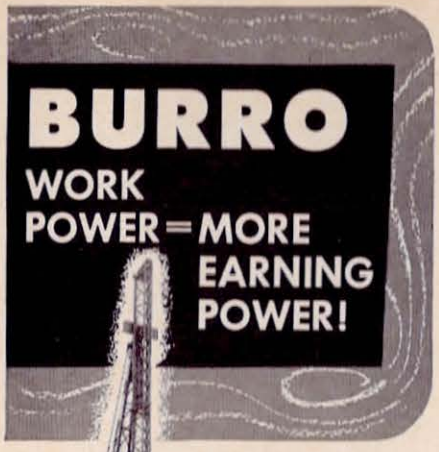
You know the importance of having equal and proper tension in all track bolts. As far as we know, the Verona Triflex Spring is the only practical device available to keep track bolts tight with equal calibrated tension in all bolts.

WOODINGS-VERONA TOOL WORKS

VERONA, PENNSYLVANIA 15147

SEND for illustrated catalog giving more information on these railroad products.

Circle 30 on reader service coupon



RUGGED!

VERSATILE!

Burro Cranes and equipment get the job done fast and efficiently, on the line, in the yards or Stores Department. Pile driving, ditching, laying welded rail, or lifting track panels are but a few of the many jobs handled quickly and economically by the BURRO.

Model 40 BURRO, equipped with automatic folding leads, shown driving piles with a diesel pile hammer.

BURRO Rail Threader handling continuous welded rail.

Model 40 BURRO Ditcher supplies its own locomotive travel and work power. Loads dump cars, furnishes necessary air for dumping.

Write for complete information and BURRO Crane Bulletin No. 162

97

CULLEN-FRIESTEDT CO.
1314 S. Kilbourn Ave., Chicago, Ill. 60623

Circle 31 on reader service coupon

WALTER TAFT

WATCHING WASHINGTON

RX FOR PASSENGER SERVICE—The ICC's Chairman, Commissioner Paul J. Tierney, says railroad passenger service (other than commutation) will survive only if based on a realistic assessment of its future potential. He warns that survival undertakings won't succeed if they are undertakings to maintain the past. Tierney expressed these views in an address before the Centerville (Iowa) Chamber of Commerce.

FUTURE POTENTIAL—The future potential, as Tierney sees it, lies principally in the medium-range travel market (100-to-250 miles) between densely populated centers "where modern rail service can provide competition on a cost, service and time basis and where adequate patronage levels could be maintained." Noting that the Northeast Corridor project contemplates this type of service, Tierney suggests that public reaction there will indicate whether like projects elsewhere would be worthwhile.

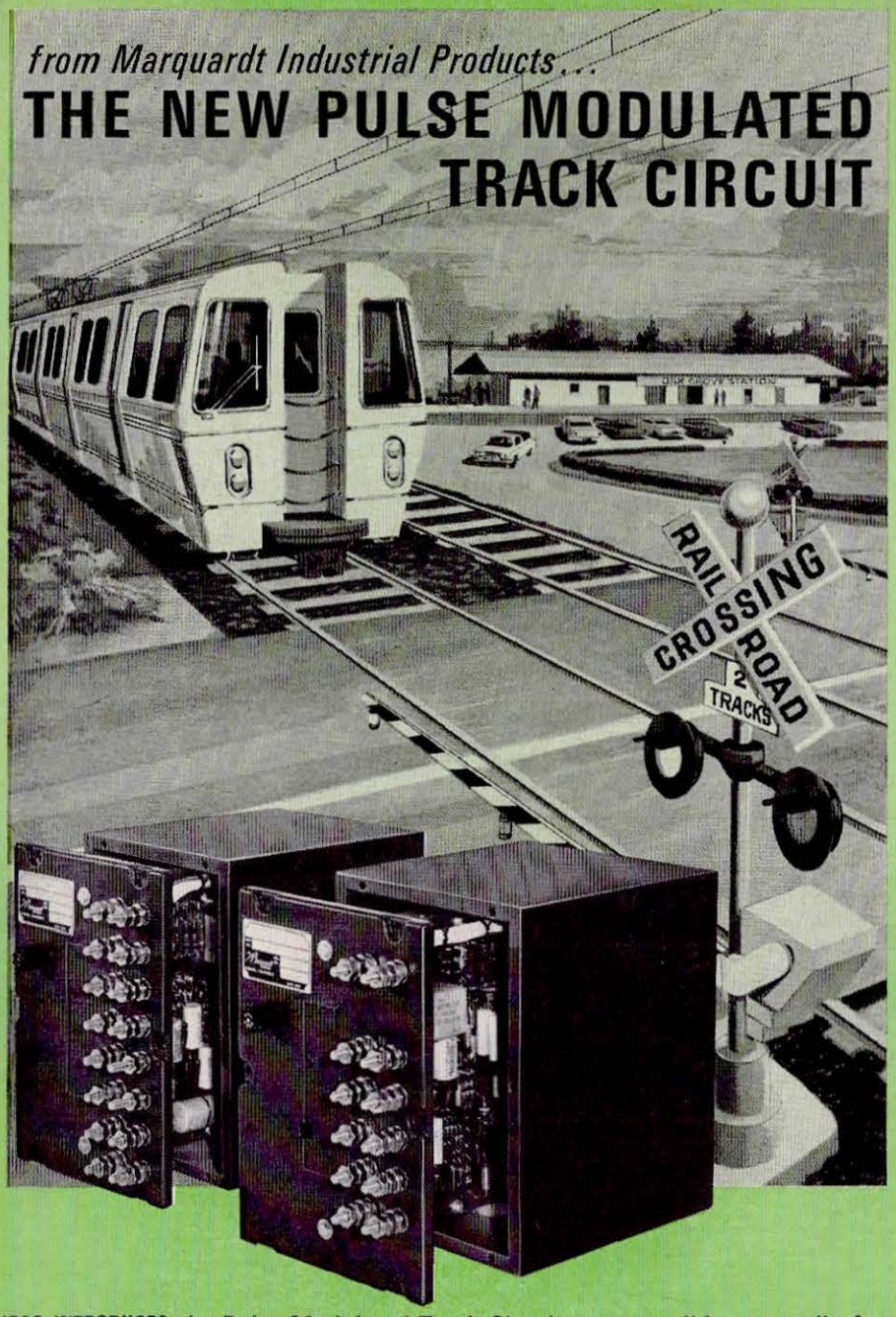
FEDERAL AID JUSTIFIED—Federal financial aid should be extended to help railroads maintain passenger service required in the public interest, Tierney also says. He argues that this is justified considering the government's subsidization of other modes and the burden of increasing such subsidies if rail service is eliminated. "No one can expect the rail industry to invest billions of dollars in capital improvements on a losing proposition," the ICC chairman also says.

NEW ATTITUDES REQUIRED—To change the bleak outlook, he thinks there must be a reversal of attitudes and policies of the industry, the public and the government. Tierney's bill of particulars here says opposition to train discontinuances is still comprised mainly of people who want rail service available for emergencies—"Significant numbers of regular patrons are hard to find." And, meanwhile, "rail managers, with some exceptions, are generally convinced that they can no longer absorb the financial losses that have become the trademark of the passenger train."

INCOMPATIBILITY—Also noted by the ICC chairman is the incompatibility of the government's transport policy and practices of the Post Office. The policy calls for essential rail passenger service, while removal of mail from trains "has turned an already shaky economic operation into a financial disaster on frequent occasions."

from Marquardt Industrial Products...

THE NEW PULSE MODULATED TRACK CIRCUIT



MIPCO INTRODUCES the Pulse Modulated Track Circuit, a new solid state audio frequency system now available in configurations which operate compatibly ***with A.C. or D.C. electric propulsion currents, D.C. coded track circuits, A.C. signal circuits, and coded cab signals.*** This latest MIPCO addition to a broad line of electronic grade crossing and signal control systems operates on a unique pulse modulation technique which overcomes external interference problems characteristic of conventional tone devices. Requirements for insulated joints and impedance bonds are minimized or eliminated entirely, depending upon specific applications.

FEATURES OF THE MIPCO PULSE MODULATED TRACK CIRCUIT

- **Eliminates most insulated joints and impedance bonds!**
- **Up to 11 operating frequencies with selective pulse modulation rates!**
- **Increased power output; low power drain!**
- **Maximum operational security through a digital code modulation system!**
- **Reliable fail-safe operation under extreme environmental conditions!**

Ask your MIPCO representative about the PMTC family of products and the complete line of electronic track circuits and grade crossing protection systems designed for your specific applications.

MARQUARDT INDUSTRIAL PRODUCTS

SYSTEMS AND COMPONENTS TO SERVE THE RAILROAD INDUSTRY

MIPCO offers an expanding product line and diversified services to meet the continuing demand for modernization by the railroad industry. Call upon MIPCO for new systems and components for improved, efficient service at lower operational and maintenance costs.

Railway Signals & Controls
2771 No. Garey Avenue
Pomona, California
- *Grade Crossing Predictor Systems (GCP)*
- *Electronic Track Circuits (ETC)*
- *Pulse Modulated Track Circuits*
- *Constant Voltage Rectifiers*

Chicago Division
4320 W. Montrose Avenue
Chicago, Illinois
Howard & Gould Products
- *Signal Rectifier and Transformer Systems*
- *Tie-boring and Bonding Drills*

R. W. Neill Products
- *Communications Systems for Railway Classification Yard Applications*
- *Communications Consoles, Voice Paging Systems, Loudspeakers, Related Components*
- *Radio Control Equipment, Solid State Amplifiers, Remote Line Test Units, Power Supply Systems*

REGIONAL OFFICES:
Chicago: 4320 W. Montrose Avenue
Philadelphia:
1617 John F. Kennedy Blvd.
Jacksonville, Florida:
1914 Beachway Road
Canadian Representative:
Vale Enterprises, Ltd.
1120 Claire Crescent
Lachine (Montreal), Quebec, Canada

RPI
RAILWAY PROGRESS INSTITUTE

MARQUARDT INDUSTRIAL PRODUCTS CO.

Circle 32 on reader service coupon

there's an easier way

to get coupler deliveries

Balancing feats are fine — in the circus. But they're a hell of a way to run a railroad. ■ If you sometimes get an uneasy feeling about coupler quality and coupler deliveries — then it's time to quit walking the tightrope of uncertainty . . . time to get with National. ■ When it comes to couplers, National has a lot going for it. And for you. ■ For example, we have the greatest productive capacity and the most stringent quality control safeguards. We have the most knowledgeable, most extensive sales-service force in the industry. We have the most experience of any coupler producer anywhere. ■ And, possibly most important, we've learned in our 100 years that leadership is earned — not by legerdemain and neat balancing acts — but by keeping faith . . . by keeping delivery promises.

NATIONAL CASTINGS DIVISION
Midland-Ross Corporation

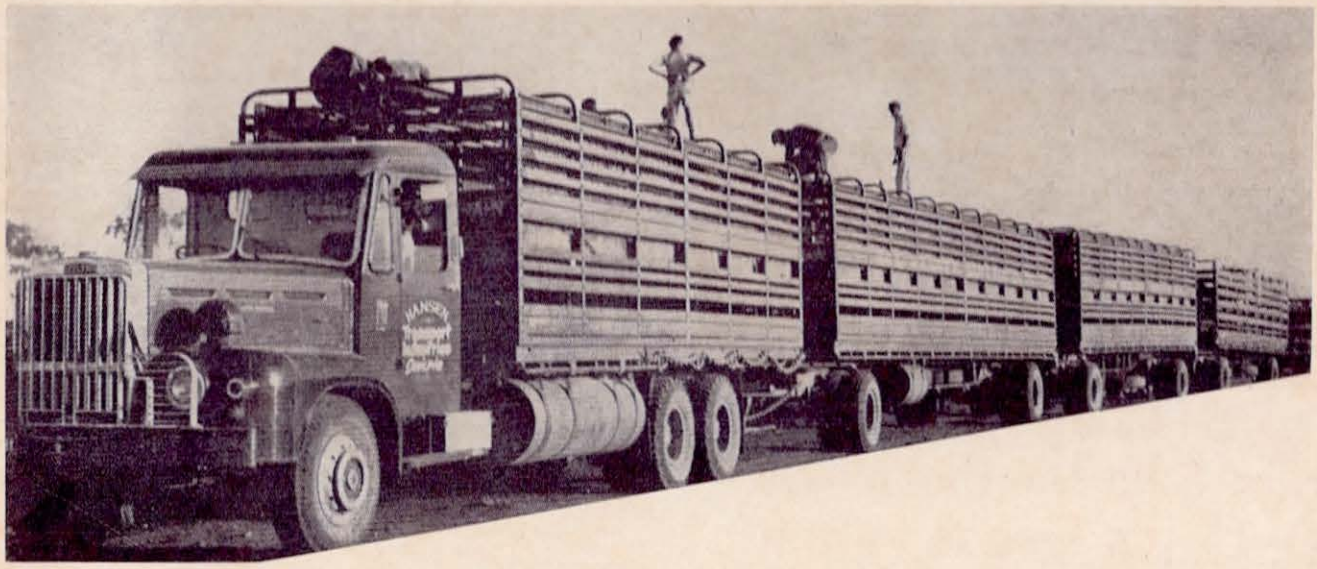
10600 QUINCY AVENUE • CLEVELAND, OHIO 44106

Service — it's our special ingredient

Circle 33 on reader service coupon

A-977

LETTERS



Trains of trailers

San Francisco, Calif.

To the Editor:

I have read with interest the article appearing on page 29 in the Feb. 12 issue of Railway Age concerning pending legislation in Washington to permit operation on the interstate highway system of trains of trailers in excess of two which is permitted under the existing controls.

Perhaps one of the easiest ways to get the hazard of such a trailer train across to the public would be to let them envision the total length of vehicle that they would be required to pass if they were driving behind it on the right-hand lane of an interstate highway system. I am sure you will agree that our problems in passing vehicles with two trailers at present constitute a serious enough safety hazard without being required when turning out to make a pass to have to jump over a train of four of these vehicles before regaining the right hand lane.

The picture appearing on page 11 of Australia International issue of December 1967 which is enclosed would seem to effectively drive this point home. To use the old bromide, one picture (above) is worth a thousand words.

It would seem that this proposal to change the existing regulations could be attacked from another angle: namely that in the days of the surface-operated street car, in its later days before extinction for the purpose of economics, the owners saw fit to apply multiple unit controls and run these cars in trains. They posed such similar burdens at that time upon the safety of passing vehicles that the districts in which they were opened finally had to set up regulations to forbid the operation in multiple unit of more than three street cars when operating on city streets—although, of course, there is no regulation applying to street cars operating in multiple unit in greater length on private right of way.

J. F. Kirkland, Regional Manager
Baldwin-Lima-Hamilton Corporation

Weed control and signaling

Washington, D. C.

To the Editor:

I am appalled by the scarcity of mention made in the February 12 issue of Railway Age of the adverse effect of brush on communication and signaling wire line performance. Only in two instances in an entire issue devoted to "weed control" was wire line plant mentioned and then in a very meaningless manner.

This discrepancy points up the fact that there is a definite lack of liaison between communications and signaling people and right-of-way-maintenance people on the various railroads, as well as among various editorial staff people.

Railway Age misused an opportunity to bring before railroad management people an extremely important reason for brush control. In fact, this issue might even be conductive to causing such management people to give less thought to the brush problem involvement in wire line performance.

N. C. Pace
Assistant to Vice President,
Communications Dept.
Southern Railway System

(The article referred to by Mr. Pace was based on answers to a questionnaire whose main purpose was to bring out trends in weed and brush control on the railroads. Perhaps Railway Age erred in not putting more emphasis on the reasons for the control of vegetation, including the protection of wire lines, but the assumption was that these are well known, at least among those responsible for this activity. Also, it was thought that the editorial on the Viewpoint page of the same issue, entitled "Weed control is cheap at the price," would bring home to railroad men generally at least some of the more important consequences of allowing vegetation to grow unchecked on the tracks and right of way. As mentioned, these include the damage that can be inflicted on communication lines by high-growing brush. **(Editor)**

For the record

Pittsburgh, Pa.

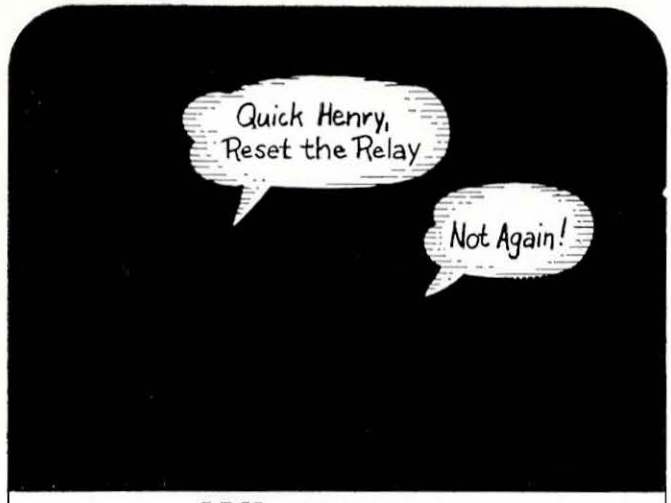
To the Editor:

Even though I have problems keeping up with my everyday reading I do make it a point not to miss certain publications, one of which is Railway Age.

Your article on page 11 of the January 15 issue is a story called "New rail line crosses rugged country to tap rich coal veins."

The article is very interesting but the new mine shown south of Bula is Federal No. 2 Mine of Eastern Associated Coal Corp. and not a mine of Consolidation Coal Company.

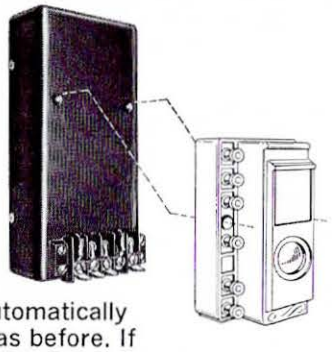
J. J. Regan
General Traffic Manager
Eastern Associated Coal Corp.



When your locomotive blows its fuse too often...

Control it with BARCO Summit Automatic Reset for Ground Protective Relay.

When an electrical system shuts off due to a power overload or short circuit, it can be a nuisance and costly. If it's a temporary fault your crewman must go and reset it manually. If it recurs again and again, it could cause an expensive breakdown.



With the Barco Summit Automatic Reset for Ground Protective Relay, you control both of these problems. Once installed, a temporary power shut off is reset automatically and operation continues as before. If the problem is a permanent one, after four trips the Barco System will not reset, and thus prevents possible damage to major electrical components.

For more information on how the Barco Summit Automatic Reset for Ground Protective Relay can keep your locomotives from blowing a fuse, write Aeroquip Corporation, Barco Division, 500 Hough Street, Barrington, Illinois. *Aeroquip products are protected by patents internationally.*

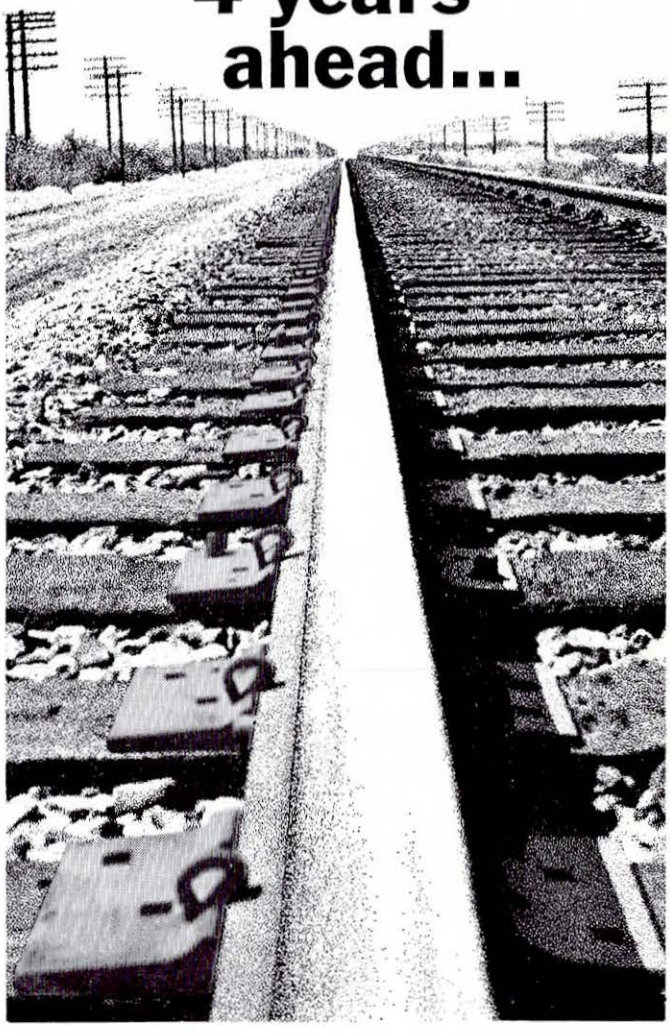
BARCO

Aeroquip

BARCO DIVISION

Circle 19 on reader service coupon

If you can see 4 years ahead...



...you're looking at Lock Spikes!

Pittsburgh Lock Spikes pay for themselves in less than four years by eliminating the necessity for frequent regaging. *Rail* Lock Spikes (shown here) eliminate play between the rail flange and tie plate shoulder. The rail is held to true line and gage, and its longitudinal movement is significantly restricted.

If you can plan four– or 8, or 16, or 32–years ahead, take a good long look at Pittsburgh *Rail, Gage,* and *Tie Plate* Lock Spikes. Their saving in track maintenance and in crosstie preservation, is incalculable.

Spike-head protrusion at tie plate surface slightly skews plate and binds rail to plate shoulders.

TELEPHONE (412) 264-4000 OR WRITE
LOCK SPIKE DIVISION

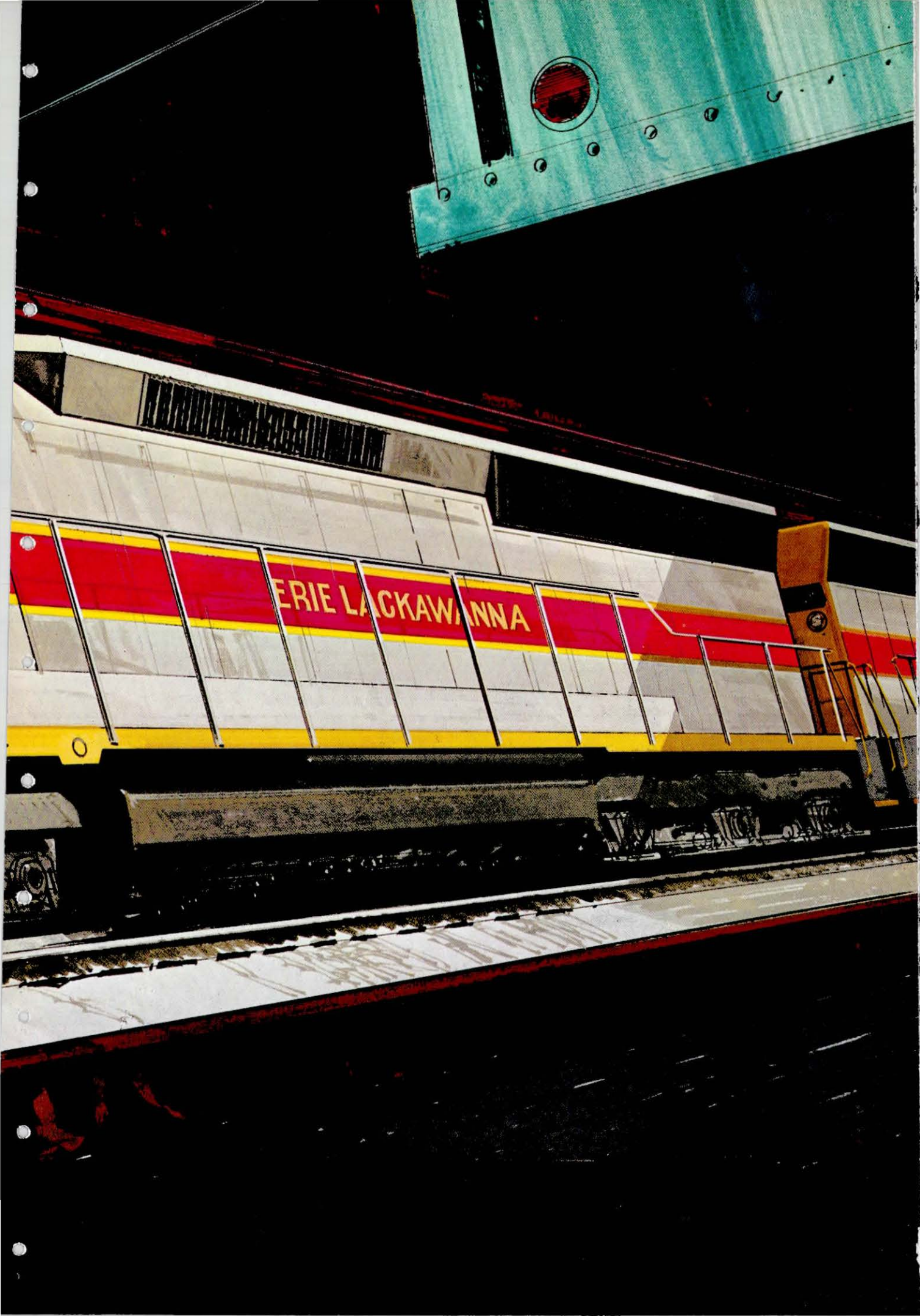
P

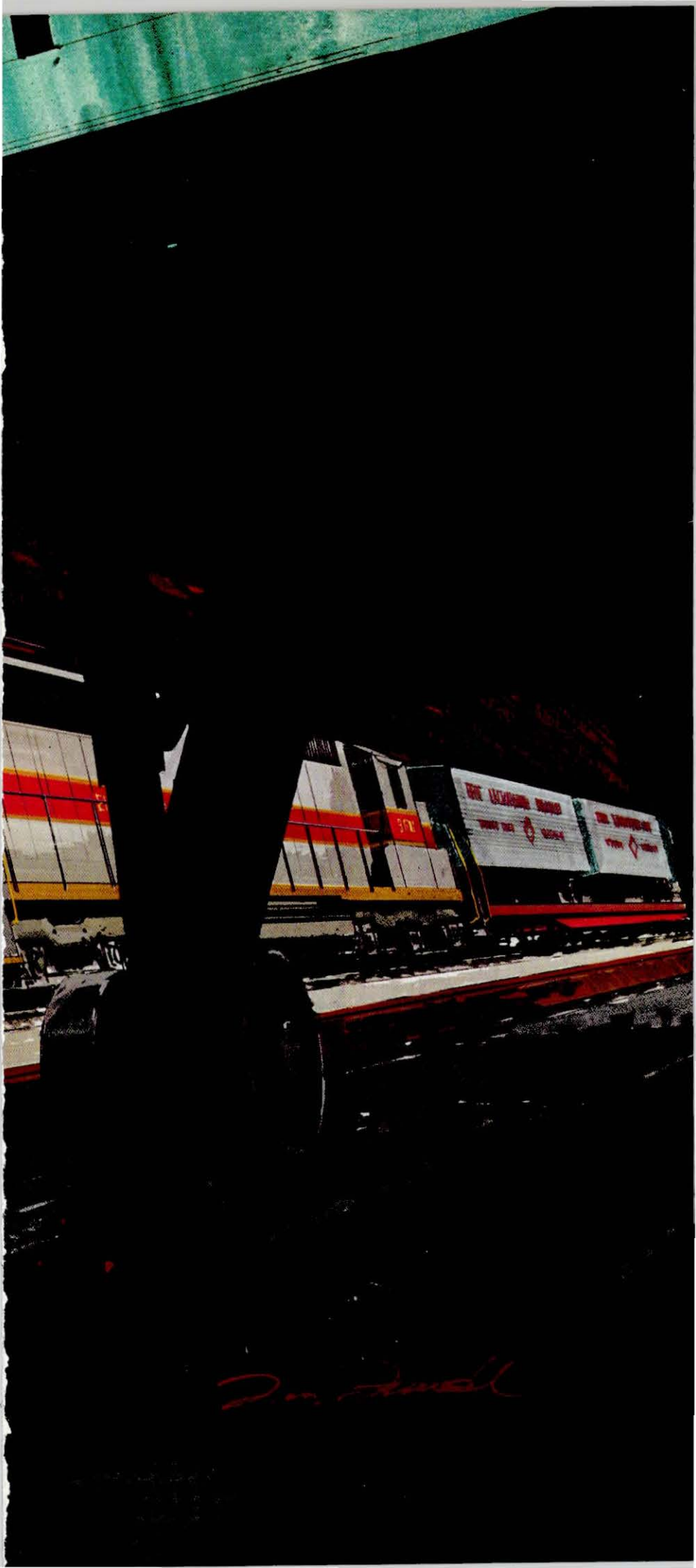
PITTSBURGH FORGINGS CO.

P. O. BOX 307, CORAOPOLIS, PA. 15108

Circle 20 on reader service coupon

3601
3601
RADIO EQUIPPED


ERIE LACKAWANNA



These two SD-45s are doing the work of five older Diesels.

And they're setting records in availability.

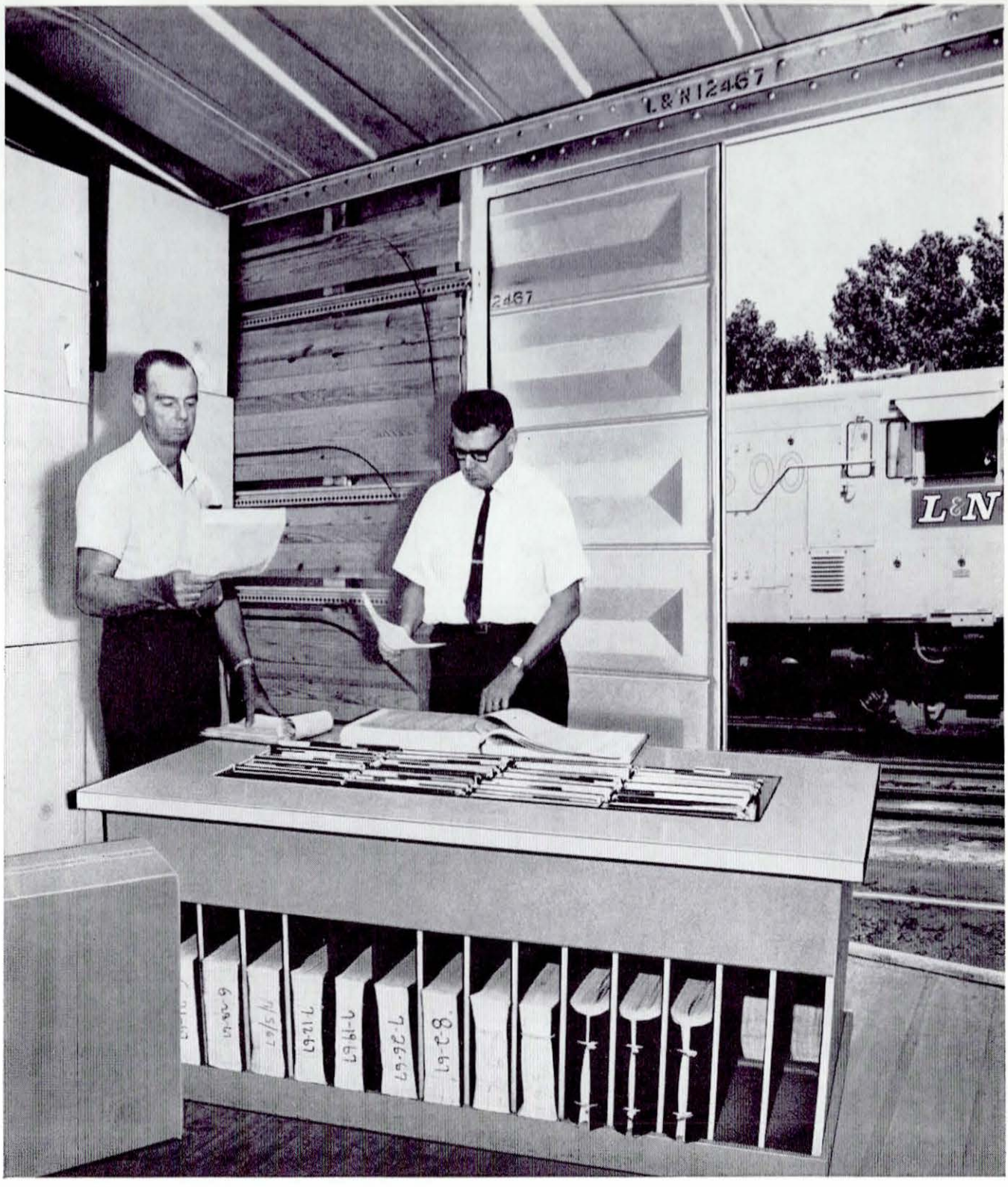
The Erie-Lackawanna replaced five 1500-horsepower units with two SD-45s on its fastest manifest trains operating between Chicago and Jersey City. These 3600-horsepower GM locomotives pull the same tonnage, and in some places they're even bettering the schedule.

In fact, the SD-45s are on 26-hour scheduled runs from Chicago to the East Coast. In a recent month, they averaged more than 18,000 miles per unit—a record for the line's long freight hauls.

Unit reduction plus record availability. The SD-45 brought both to the Erie-Lackawanna. This is the kind of performance you can expect from Electro-Motive's second generation Diesel locomotives.

GM
MARK OF EXCELLENCE

Electro-Motive Division
La Grange, Illinois



L&N Customer Service Centers keep very close to your shipment!

Now, one call to the L&N Customer Service Center in your community puts you in touch with the exact person who can answer your inquiry. Centers are located within freight classification yards. Here, every car movement on the line or in the yard is recorded, verified and stored for instant recall. You speak directly to the person with the facts at his fingertips. One call does it all. ☐ Modern communications, data processing advancements and ingenious systems engineering techniques made this possible! Four years of intensive research and analysis proved the need! Only L&N has made it a working reality. ☐ L&N Customer Service Centers are now located in Nashville, Memphis and Mobile, but more are on the way. We believe customer service is the first consideration in running a railroad. Don't you wish everyone would run his business that way? ☐

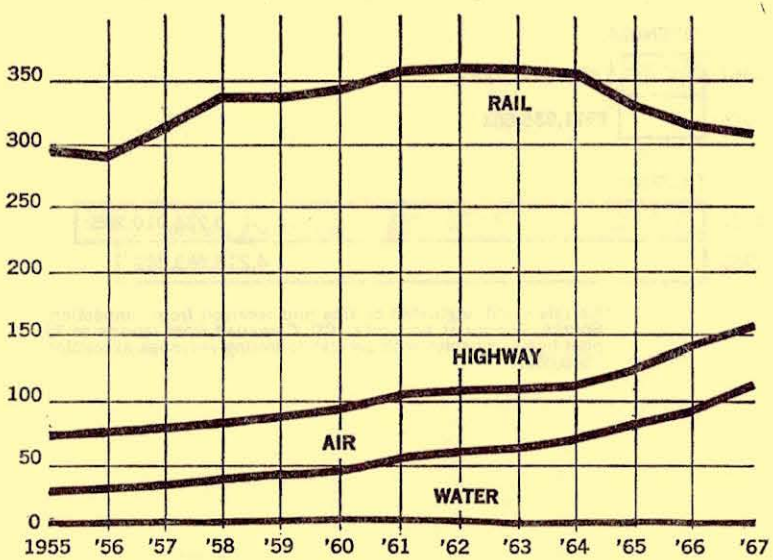
L&N
LOUISVILLE AND NASHVILLE RAILROAD

F-28

Circle 36 on reader service coupon

POST OFFICE TRANSPORTATION EXPENDITURES

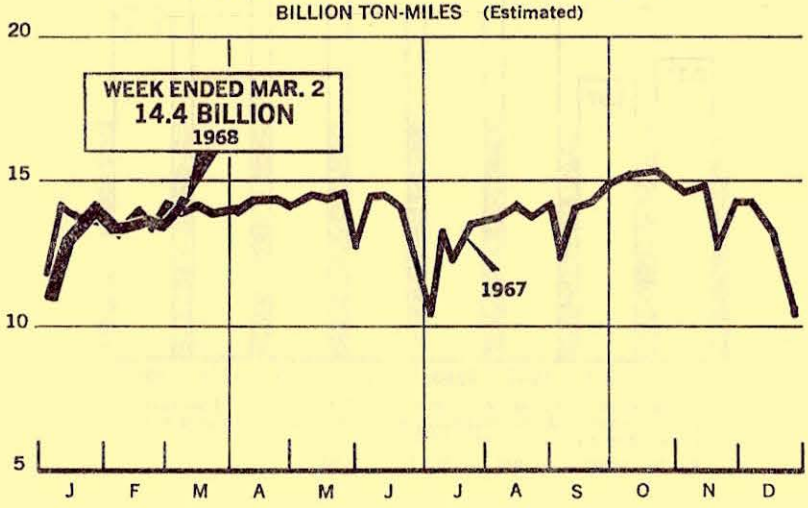
(in millions of dollars)



Source: U.S. Post Office Dept., Annual Reports of the Postmaster General.

RAIL FREIGHT TRAFFIC TRENDS

BILLION TON-MILES (Estimated)

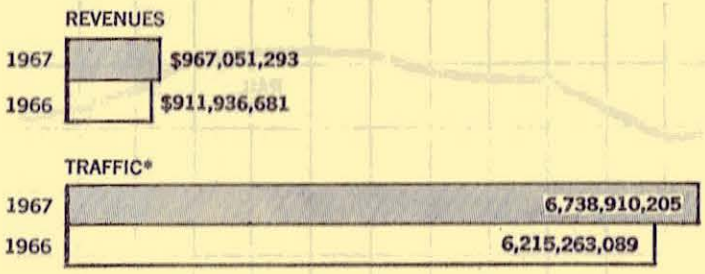


Source: Association of American Railroads

Current statistics

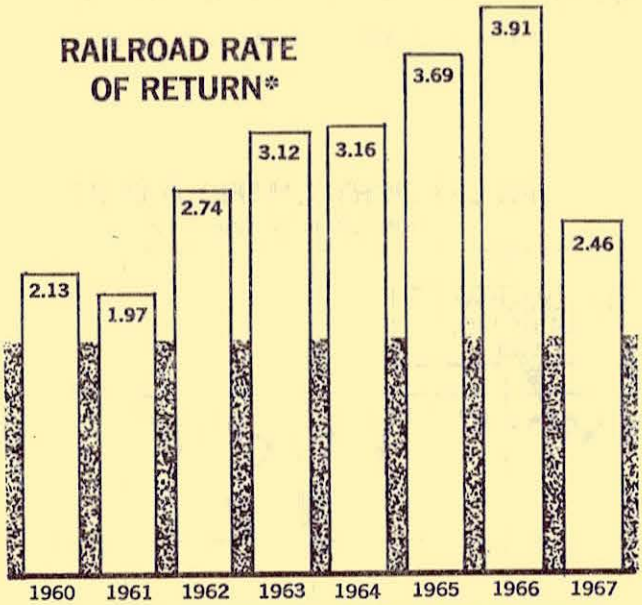
Net income	
9 mos., 1967	$342,200,000
9 mos., 1966	659,900,000
Carloadings, revenue freight	
10 wks., 1968	5,023,658
10 wks., 1967	5,158,883
New freight cars on order	
Feb. 1, 1968	24,893
Feb. 1, 1967	51,450
New freight cars delivered	
1 mo., 1968	4,713
1 mo., 1967	7,217
Serviceable cars	
Feb. 1, 1968	1,401,643
Feb. 1, 1967	1,421,406

TRANSPORTATION REVENUE AND TRAFFIC OF OIL PIPE LINE COMPANIES



*Barrels of oil originated on line and received from connection.
Source: Bureau of Accounts, ICC. Compiled from reports of 79 pipe line companies with annual operating revenues exceeding $500,000.

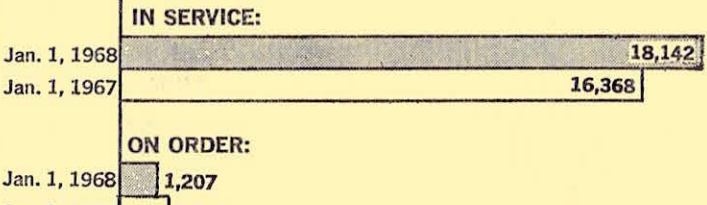
RAILROAD RATE OF RETURN*



*On average net property investment (after deduction of accrued depreciation and amortization), which includes cash and materials and supplies at year-end.

Source: Economics and Finance Dept., AAR.

MECHANICAL REFRIGERATOR CARS IN SERVICE AND ON ORDER



Source: Operations and Maintenance Dept., Car Service Division, AAR.

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended Mar. 9 totaled 531,658 cars, the Association of American Railroads announced on Mar. 14. This was a decrease of 2,097 cars, or 0.4%, compared with the previous week; an increase of 9,995 cars, or 1.9%, compared with the corresponding week last year; and a decrease of 25,942 cars, or 4.7%, compared with the equivalent 1966 week. Ton-miles generated by carloadings in the week ended Mar. 9 are estimated at 14.3 billion, an increase of 3.2% above the corresponding week of 1967, and 0.3% above the 1966 week.

REVENUE FREIGHT CARLOADINGS

For the week ended Saturday, Mar. 9

District	1968	1967	1966
Eastern, including Allegheny and Pocahontas ..	213,014	196,045	226,830
Southern	120,402	116,275	119,131
Total Eastern and Southern Districts	333,416	312,320	345,961
Northwestern .	58,664	61,749	58,528
Central Western	100,592	109,014	111,960
Southwestern .	38,986	38,580	41,151
Total Western Districts	198,242	209,343	211,639
Total All Roads	531,658	521,663	557,600
Commodities:			
Grain and Grain Products	43,145	51,019	55,263
Livestock	1,132	1,702	1,736
Coal	107,029	93,372	108,783
Coke	9,313	6,770	8,590
Forest Products	42,334	41,219	40,687
Ore	16,790	18,027	18,302
Merchandise l.c.l.	4,217	5,210	6,530
Miscellaneous .	307,698	304,344	317,709
Mar. 9	531,658	521,663	557,600
Mar. 2	533,755	534,359	544,836
Feb. 24	499,943	504,271	536,003
Feb. 17	516,730	530,212	537,702
Feb. 10	504,136	499,688	534,350
Cumulative total, 10 weeks ...	5,023,658	5,158,883	5,300,836
Estimated revenue ton-miles (billions) 10 weeks ...	134.5	135.2	135.0

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended Mar. 2 totaled 26,272 cars, carrying 43,206 trailers, compared with 24,249 cars, carrying 40,845 trailers, in the corresponding 1967 week. Loadings for 1968 up to Mar. 2 totaled 212,043 cars, carrying 348,873 trailers, compared with 194,531 cars, carrying 317,432 trailers, in the corresponding period of 1967.

IN CANADA

Carloadings for the seven-day period ended Feb. 21 totaled 67,847 cars, compared with 66,612 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd. from Connections
Cumulative Totals		
Feb. 21, 1968.....	67,847	23,719
Feb. 21, 1967.....	68,759	25,572
Totals for Canada		
Feb. 21, 1968.....	480,635	169,239
Feb. 21, 1967.....	509,587	180,390

FREIGHT TRAIN CARS

• *Elgin, Joliet & Eastern.*—Ordered 26 100-ton, 50-ft coil cars from Evans Products for April delivery. Cars will be equipped with lift-off covers, Hydra-Cushion underframe and Evans-design crossmembers.

• *Missouri Pacific.*—Will order an additional 360 freight cars at a cost of approximately $9.6 million as part of its 1968 capital improvement program. Mopac will acquire 200 70-ton insulated box cars equipped with cushion underframes and load dividers; 157 86-ft high-cube auto parts cars equipped with cushion underframes; and 3 58-ft 300-ton heavy-duty flat cars. These orders will bring Missouri Pacific's car program to 1,560 new freight cars for 1968. The total cost of the program, including the cars and 20 diesels, now stands at $34.2 million.

TRANSIT

• *Washington Metropolitan Area Transit Authority.*—Awarded a $1,057,000 contract to J.E. Greiner Co., of Baltimore, for final design of the Union Station Metro stop and a length of tunnel beginning near the intersection of 3rd and D Streets, N.W., and continuing easterly to Union Station and then northward along the Baltimore & Ohio right of way to Florida Avenue, a total distance of 7,050 feet. Under the 21-month contract, Greiner will complete the design of all subway structures, bridges, surface accesses, utilities and other facilities necessary to that section of the Metro.

NEW FACILITIES

• *Duluth, Missabe & Iron Range.*—Ordered CTC equipment from WABCO for 6 miles of line between Fens, Minn., and Fairlane, Minn. with the control center to be at Iron Junction.

• *Louisville & Nashville.*—Ordered 131 Carryphone III radios from the Signal & Communications Division of WABCO for yard switching and general yard use.

• *Sante Fe.*—Ordered a SEARCH locomotive test system from Dalmo Victor, a division of Textron. Delivery will be made to the Santa Fe's running shop at Barstow, Calif. this month. According to William S. Sher, assistant automatic test equipment product manager at Dalmo Victor, the Santa Fe will first use SEARCH for testing locomotives associated with its Super C piggyback-container premium freight service between Los Angeles and Chicago. SEARCH, a tape-controlled digital analyzer, is designed to provide railroads with a tool that will automatically and reliably check out diesel-electric locomotives. At the push of a button, SEARCH automatically goes through more than 1,000 tests per hour to detect and locate failures and potential failures in the mechanical and electrical systems. SEARCH is also being used by the Southern Pacific and the Canadian National, according to the supplier.

YOU OUGHT TO KNOW

Containers: "The time has come"

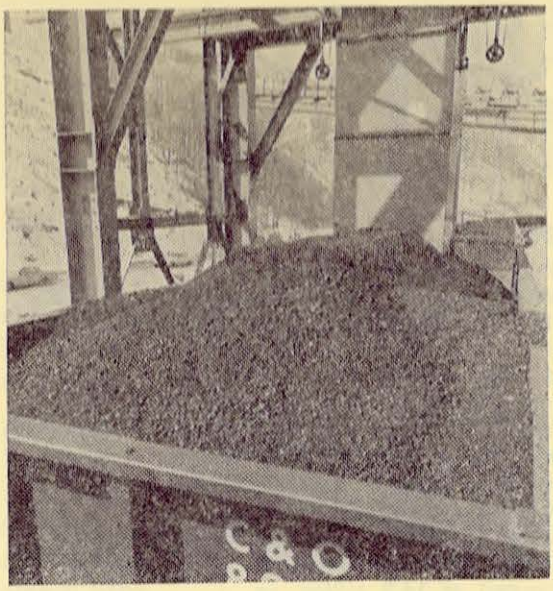
So far as Milwaukee President C. E. Crippen is concerned, "Containerization's time has come. Containerization represents an unstoppable trend, simply because the advantages are many and the economics are so attractive." Railroads, he contends, "will have to be ready for a growing volume — probably a rapidly growing volume—of containers moving in import-export traffic. This will stimulate greater development in the use of containers for domestic traffic as well." And the time and money being spent by U.S. railroads in import-export, land-bridge containerization? "We're making investments in the future—a future that may not be very far away."

Italy's first electric power comes to U. S.

Three U.S. railroads helped move Italy's first electric locomotive after its arrival at New Orleans' port en route to the National Museum of Transport at Barretts Station (St. Louis), Mo. The locomotive, No. E.550.025, helped start electric rail service out of Genoa in 1910. It was retired in 1962. U. S. railroads involved in its movement were Illinois Central, Missouri Pacific, and Terminal Railroad Association of St. Louis.

Engineers plan technical session in Chicago

Ways to attract technical men to the railroad industry, and the technological revolution taking place in transportation, will be among the subjects discussed at a two-day Joint Railroad Conference in Chicago March 27-28. The session will be sponsored by the American Society of Mechanical Engineers and the Institute of Electric and Electronics Engineers.



C&O loads its coal trains on the move

The Chesapeake & Ohio is using the "flood - loading" technique for putting coal aboard some of its unit trains. At the Harris Mine at Barrett, W. Va., coal trains (above) are loaded while rolling under a movable chute beneath the loading hopper at a loading rate of 3,000 tons per hour. Each 95-ton car can be filled in three minutes without spillage, since the chute is raised momentarily between cars.

GATC wins contract for wheel-rail study

The Department of Transportation has announced a $58,000 contract to General American Transportation Corp. for a study that "will focus on apparatus able to analyze wheel-rail dynamics at speeds up to 300 mph." GATC's Research Division will develop preliminary data for the design of research and testing laboratory apparatus for this purpose.

Hutchinson quits DOT after year as under secretary

A charter member of the Department of Transportation's "first team" has turned in his resignation. He is Everett Hutchinson, who served on the Interstate Commerce Commission for 10 years and was appointed Under Secretary of Transportation by President Johnson on Jan. 12, 1967. Hutchinson said that for personal reasons he was returning to private law practice—"with regret but with a deep feeling of fulfillment in having been privileged to take part in the formation of the new Department."

Advertisers' Index

Abex Corporation	6
ACF Industries, Inc., American Car & Foundry Division	14-15
Aeroquip Corporation, Barco Division	55
American Oil Company	24-25
American Steel Foundries, Inc., Amsted Industries	13
Bruce Co., E.L.	43
Canada Iron Foundries, Ltd.	17
CF&I Steel Corporation	4
Cleveland Frog & Crossing Company, Subsidiary of Pettibone Mulliken Corp.	41
Cullen-Friestedt Company	50
Daubert Chemical Company	44
Difco, Inc.	40
Dow Chemical Company, The	IBC
Du-Wel Steel Products Co.	46
Electro-Motive Division of General Motors Corp.	56-59
General Steel Industries	BC
Gifford-Hill & Company	45
Hayes Track Appliance Co.	48
Humble Oil & Refining Company	34A
Louisville & Nashville Railroad	60
Magor Division, Fruehauf Corporation	10
Marquardt Industrial Products	51
Missouri-Kansas-Texas Railroad Company	40
Motorola Communications & Electronics, Inc.	22-23
National Castings Division, Midland-Ross Corporation	52-53
National Lead Company, Magnus Metals Division	18
Nordberg Manufacturing Co.	21
Pittsburgh Forgings	55
Poor & Company	47
Railway Maintenance Corporation	34
Royce Kershaw Co., Inc.	46
Scullin Steel Co.	42
Speno Railroad Ballast Cleaning Co. Inc., Frank	48
Sperry Rail Service, Division Automation Industries, Inc.	19
Standard Car Truck Co.	26
Tamper, Inc.	17
Timken Roller Bearing Company, The, Railroad Division	IFC-3
Vapor Corporation	39
Woodings-Verona Tool Works	49
Youngstown Steel Door Company	9

FOR ADVERTISERS . . .

An opportunity to multiply sales contracts through the

INDUSTRY MARKETING RATE

Available to advertisers who schedule identical advertisements in Railway Age, Railway Purchases and Stores and in one or more of the other three magazines of the Railway Age Group, to run concurrently within a two-consecutive-calendar-month period.

Write to our office nearest you for complete information.

•

Railway Age
Railway Purchases & Stores
Railway Locomotives & Cars
Railway Track & Structures
Railway Signaling & Communications

(See complete list of offices on classified ad page)

IF YOU ARE MOVING . . .

ATTACH ADDRESS LABEL HERE

We need 5 weeks notice before change of address becomes effective. Attach mailing label here (but in any case give us complete old address) and write new address below. Mail to:

RAILWAY AGE
P.O. Box 961 Bristol, Conn. 06010

Name .....
Address .....
City, State, ZIP .....

JAN. 22
ANNUAL REVIEW AND OUTLOOK ISSUE OF RAILWAY AGE

For extra copies of this indispensable review of 1967 and look ahead to 1968—an invaluable reference—send $1.00 for each copy desired to:

RAILWAY AGE
P.O. BOX 961
BRISTOL, CONN. 06010

FOR SALE—
35 TANK CARS

8000 Gallon—coiled—
Class ICC-103
—Attractively priced—
Interchange condition
Immediate shipment

CONTACT:
CHICAGO FREIGHT CAR
205 W. Touhy,
Park Ridge, Illinois

PHONE: 312-774-1223

MACDELL means Machinery in Chicago
Make your trip to the REMSA Show . . .
Or any visit to Chicago . . . doubly profitable.

Just add to your schedule a visit to our downtown showroom to inspect a complete line of production machinery — machine tools — toolroom, production and metal fabricating equipment.

THE MACDELL CORPORATION
218 North Morgan Street
Chicago, Illinois 60607
A.C. 312 666-7714

Advertising Sales Department

C. J. Fisher, vice president—sales, Chicago

New York, N. Y. 10007,
30 Church St., (212) 964-3060
W. A. Cubbage—regional sales manager
Charles E. Keil—district manager

Chicago, Ill. 60604,
14 E. Jackson Blvd.
(312) 427-3501
K. F. Sheeran—regional vice president;
John M. Brennan—regional sales manager
Peter Hoagland
Ross Mandic
—district managers

Lakewood, Ohio 44107,
12700 Lake Ave., Apt. 1310
(216) 226-8038
Harry H. Melville—vice president

Pittsburgh, Pa. 15219, Room 720,
(412) 471-7871
Frick Building
William M. Champion—regional sales manager
Ronald M. Giallonardo—district manager

Atlanta, Ga. 30309,
22 Eighth St., N. E.,
TRinity 2-6720—J. S. Crane

Dallas, Tex. 75219,
3636 Cedar Springs (#207)
(214) 521-2322
Joseph Sanders

Los Angeles, Cal. 90017,
1313 West Eighth St.
(213) 483-8414
Fred Klaner, Jr.

San Francisco, Cal. 94133,
515 Pacific Ave.
(415) 421-7004
Lewis A. Vogler & Co.

London S. W. 1, England
TRafalgar 6318
67/68 Jermyn St., St. James's
Max F. Holsinger, Peter Clifton, F. E. Mizen

Manchester 22, England
Haletop
Wythenshawe Civic Center
Ian Goulden

Paris, 8e, France
70 Rue de Ponthieu
Stephen Brown-Joussard

4 Düsseldorf-Rath
Eitelstrasse 32
Max F. Holsinger,
E. Hillerbrand, Herbert Haibt,
Reinhard Schomburg

Tokyo, Japan
Sun Gain Shia, Ltd.
Shiba Nikkatsu Bldg.
13, Shiba Park
Minato-Ku
C. H. Yiu, Managing Director

VIEWPOINT

The M/W revolution must take another big step

The thrust of technological advancement has produced great changes in the maintenance-of-way field in recent years. Ingenious machines, developed especially for the purpose, have elevated the efficiency of track-maintenance jobs to heights not dreamed of as recently as 10 years ago. Other measures, notably butt-welded rail, have made it possible to make important reductions in the amount of maintenance attention required by the tracks.

The large dollar savings that have resulted from these advances are proof that the application of science and technology in the M/W departments has paid off handsomely for railroads. Yet there is an important facet of the M/W field that remains untouched by the technological revolution. That is the fashion in which funds are allocated for maintenance of tracks and structures. What we have is a situation in which the methods of doing the work have made great forward strides, while, on the other hand, the means of deciding how much money to spend and where to spend it have not undergone any material change on many railroads for at least 50 years.

The lag that has occurred has been in two related sectors. Both involve decision making. One has to do with deciding how much money is to be spent on the tracks and structures, the other with deciding where to spend the money available. In both areas the main decision-making factor used today is human judgment unsupported by scientific criteria. Budget requests of M/W officers to management are founded on human judgment based on human observation and inspection. In its consideration of these requests management has one eye on the needs of the properties and the other on the earnings statement. Which consideration predominates depends largely on the current state of business.

In view of this situation it is encouraging to note that a few railroads are showing interest in systems for measuring track condition and using the information as a basis for deciding where and how maintenance money is to be spent. These systems, at least in their application in this country, are still in an early stage. But they could quickly be brought to a state of higher development if a strong undercurrent of demand should materialize among railroads.

MONEY—AND THE SCIENTIFIC METHOD

What would still be needed is a scientific method of determining how much materials and labor should be applied to a piece of track per year. Track is, or should be, an engineered structure. This being the case, it should be possible to develop formulas for determining how much maintenance work is required for a given section of track subject to a given amount of traffic.

The availability of methods for determining how much money is needed and where it should be spent would add stature to the budget requests made by chief engineers. Management officers would know that failure, for any length of time, to spend the calculated amounts for maintenance would result inevitably in deterioration of the properties, thus imposing the need eventually of undertaking uneconomical crash programs of rehabilitation.

TORDON 10K Pellets herbicide, Agricultural & Industrial Bioproducts Sales, The Dow Chemical Company, Midland, Michigan 48640.

He always gets the brush off.

Sure. Fast. Easy. Tordon® 10K Pellets herbicide. A single handful takes care of 30 square feet of the toughest brush growing along the right-of-way. Lets one man do a big job. No need for expensive equipment. Perfect for spot problems. Ask your Dow representative, or write direct for details. You'll get the brush off.

DOW

Failure in fabricated underframe. Crack in bolster at center sill.

THIS can't happen to a GSI Cast Steel Underframe

It takes cast steel underframes to keep flat cars and bulkhead cars in service . . . maintenance free.

Cast steel underframes mean one-piece construction . . . maximum strength from end to end. There's no place for failure!

Fabricated underframes mean parts and pieces, welds and rivets.

There's really no comparison.

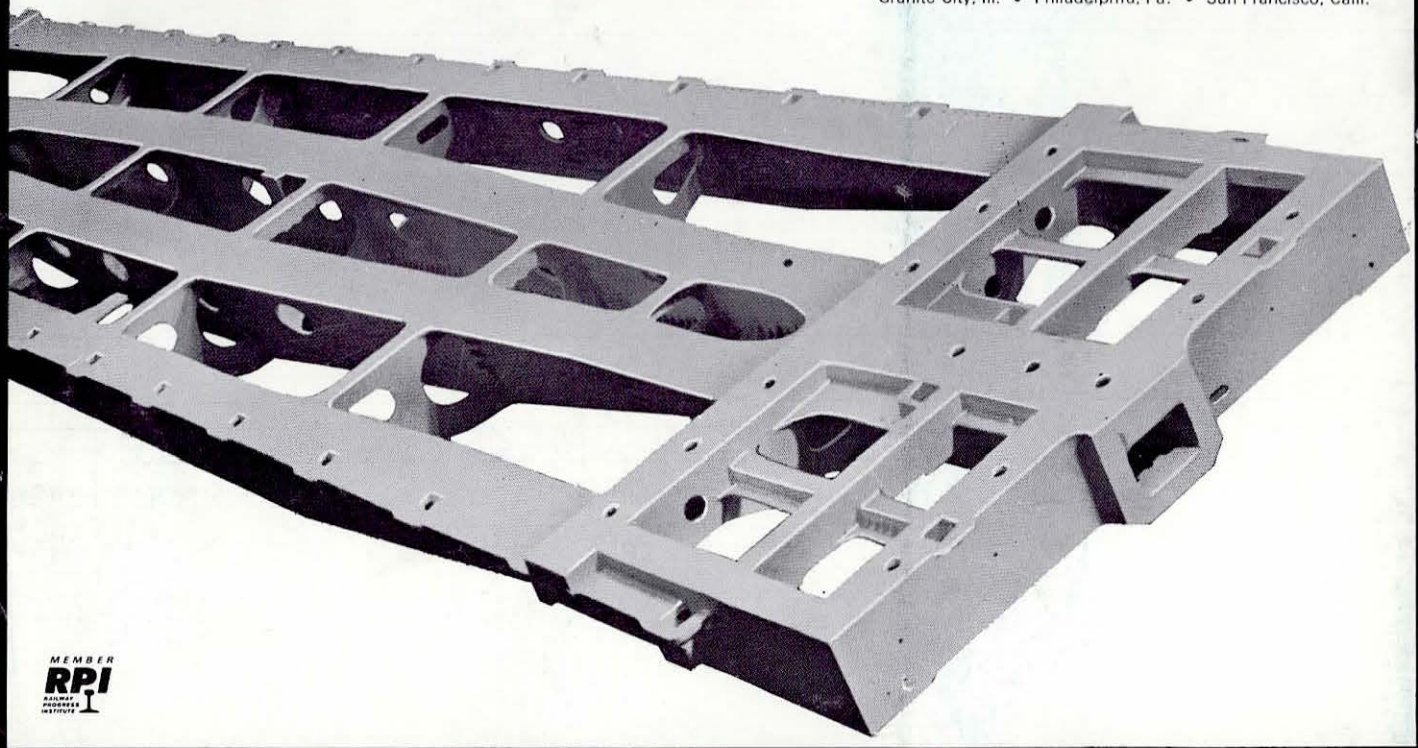
Remember—to convert GSI flats for bulkhead service . . . you just add interlocking cast steel end posts.

Anyway you look at it — GSI Cast Steel Underframes are by far the most reliable and economical for the long run.

GENERAL STEEL INDUSTRIES INC.

CASTINGS DIVISION | GSI

Granite City, Ill. • Philadelphia, Pa. • San Francisco, Calif.



MEMBER RPI RAILWAY PROGRESS INSTITUTE